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# *Major Amendment* to the Revised 1995-1997 Boston TIP

## Boston Metropolitan Planning Organization

Beverly–Salem Bridge

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# *Major Amendment*

## *to the Revised 1995-1997 Boston TIP*

*Endorsed by the Metropolitan Planning Organization with a Determination of Air Quality Conformity for the Boston MPO Region*

***June 29, 1995***

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**Central Transportation Planning Staff**

Directed by the Boston Metropolitan Planning Organization, which comprises:

Executive Office of Transportation and Construction, Commonwealth of Massachusetts
Massachusetts Bay Transportation Authority
Massachusetts Bay Transportation Authority Advisory Board
Massachusetts Highway Department
Massachusetts Port Authority
Metropolitan Area Planning Council

## ENDORSEMENT OF THE MAJOR AMENDMENT TO THE TIP

On motion by Mr. Dindio, representing the Massachusetts Highway Department, seconded by Mr. Constable, President of the Metropolitan Area Planning Council, the MPO endorsed the Major TIP Amendment and Air Quality Conformity Determination as recommended by the SSC, ***provided however:*** *that if the pending legislation known as the Metropolitan Highway System (or equivalent legislation) is passed which would balance the existing STIP before final approval of the amendment, the amendment shall be withdrawn. If such legislation is approved after the amendment has become final, the MPO will take all practical efforts to reinsert projects deleted by the amendment into the FY 1996 TIP.*

This motion was adopted by the MPO by a vote of 4-1, with one abstention.

Voting **for the motion** were the representatives of:

The Executive Office of Transportation and Construction
The Massachusetts Bay Transportation Authority
The Massachusetts Highway Department
The Massachusetts Port Authority

Voting **against the motion** was the representative of:

The Massachusetts Bay Transportation Authority Advisory Board

**Abstaining** from voting on the motion was the representative of:

The Metropolitan Area Planning Council

Copies of the signed endorsement memos are on file with the Central Transportation Planning Staff, Ten Park Plaza, Suite 2150, Boston 02116.

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## FY 1995 - FY 1997 TIP:
## Financial Summary of the Major Amendment

| Fiscal Year | Federal (+ Matching) Target | NFA Target | Total Target | Federal (+ Matching) Funds Programmed | NFA Funds Programmed | Total Funds Programmed |
|---|---|---|---|---|---|---|
| FY 95 | $ 930,915,647 | $ 40,053,000 | $ 970,968,647 | $ 930,915,647 | $ 40,053,000 | $ 970,968,647 |
| FY 96 | $ 1,013,132,544 | $ 114,343,550 | $ 1,127,476,094 | $ 1,013,132,544 | $ 114,343,550 | $ 1,127,476,094 |
| FY 97 | $ 944,986,460 | $ 303,405,174* | $ 1,248,391,634 | $ 944,986,460 | $ 303,405,174* | $ 1,248,391,634 |

* Includes $ 200 million anticipated to be received after enactment of MHS legislation

This table serves as documentation that the TIP as amended, is financially constrained according to the definition in 23 CFR Part 450.324. The projects programmed for this region meet the funding estimates of federal and state funds available in each of these fiscal years.

## FY 1996 ELEMENT OF THE 1995-1997 TRANSPORTATION IMPROVEMENT PROGRAM

### Program Summary

| Funding Program | # of Projects | Federal Funds Programmed | Matching Funds Programmed | Total Funds Programmed |
|---|---|---|---|---|
| Bridge Program (Off-System) | 0 | $ 0 | $ 0 | $ 0 |
| Bridge Program (On-System) | 1 | $ 40,000,000 | $ 10,000,000 | $ 50,000,000 |
| Congestion Mitigation/Air Quality Improvement | 0 | $ 0 | $ 0 | $ 0 |
| Interstate Construction | 1 | $466,000,000 | $ 51,777,778 | $ 517,777,778 |
| Interstate Maintenance | 0 | $ 0 | $ 0 | $ 0 |
| Interstate Transfer | 0 | $ 0 | $ 0 | $ 0 |
| Metropolitan Highway System | 0 | $ 0 | $ 0 | $ 0 |
| National Highway System | 1 | $ 62,500,000 | $ 15,625,000 | $ 78,125,000 |
| Non-Federal Aid | 64 | $ 0 | $114,343,550 | $ 114,343,550 |
| Section 3 (Fixed Guideway) | 1 | $ 52,594,063 | $ 13,148,516 | $ 65,742,579 |
| Section 3 (New Starts) | 1 | $ 86,200,000 | $ 21,550,000 | $ 107,750,000 |
| Section 3 (Livable Community Initiative) | 1 | $ 480,000 | $ 120,000 | $ 600,000 |
| Section 9 (Capital) | 4 | $ 44,023,841 | $ 11,005,960 | $ 55,029,801 |
| Section 9 (Operating) | 2 | $ 18,255,443 | $ 18,255,443 | $ 36,510,886 |
| Section 16 (Mobility Assistance) | 0 | $ 0 | $ 0 | $ 0 |
| Section 18 (Paratransit Assistance) | 0 | $ 0 | $ 0 | $ 0 |
| Surface Transportation Program /Boston Earmark | 0 | $ 0 | $ 0 | $ 0 |
| Surface Transportation Program/Enhancement | 0 | $ 0 | $ 0 | $ 0 |
| Surface Transportation Program/Rural | 0 | $ 0 | $ 0 | $ 0 |
| Surface Transportation Program/Safety | 0 | $ 0 | $ 0 | $ 0 |
| Surface Transportation Program/Statewide | 1 | $ 81,277,200 | $ 20,319,300 | $ 101,596,500 |
| **Total** | **77** | **$851,330,547** | **$276,145,547** | **$1,127,476,094** |

BOSTON — CENTRAL ARTERY /THIRD HARBOR TUNNEL — ID #: 195001

**Funding Program:** **BRIDGE (ON-SYSTEM)**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Design/Right-of-Way/Construction
Description: This portion of the project includes $15,000,000 for the phased obligation of Contract # C17A2, which was advertised on August 23, 1994, and $35,000,000 to fund other Artery contracts.

| | |
|---|---|
| Federal Funds: | $40,000,000 |
| State Funds: | $10,000,000 |
| Total Funds: | $50,000,000 |

BOSTON — CENTRAL ARTERY /THIRD HARBOR TUNNEL — ID #: 195001

**Funding Program:** **INTERSTATE CONSTRUCTION**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction & Design
Description: This portion of the project includes funding for Artery contracts eligible for Interstate funding.

| | |
|---|---|
| Federal Funds: | $466,000,000 |
| State Funds: | $51,777,778 |
| Total Funds: | $517,777,778 |

BOSTON — CENTRAL ARTERY/THIRD HARBOR TUNNEL — ID #: 195001

**Funding Program:** **NATIONAL HIGHWAY SYSTEM**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Design/Right-of-Way/Construction
Description: This portion of the project includes $15,000,000 for the phased obligation of Contract # C17A2, which was advertised on August 23, 1994, $15,000,000 for the proposed phased obligation of Contract # C12A3, and $48,125,000 to fund other Artery contracts.

| | |
|---|---|
| Federal Funds: | $62,500,000 |
| State Funds: | $15,625,000 |
| Total Funds: | $78,125,000 |

BEVERLY — CABOT ST. — ID #: 600219

**Funding Program:** **NON-FEDERAL AID**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct Cabot Street from the Beverly-Salem Bridge at Rantoul Street to Roosevelt Avenue.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $3,250,000 |
| Total Funds: | $3,250,000 |

BEVERLY — RTE. 1A — ID #: 077158

**Funding Program:** **NON-FEDERAL AID**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Route 1A from Roosevelt Avenue to the Wenham town-line.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $1,000,000 |
| Total Funds: | $1,000,000 |

BOLTON — RTE. 117 (MAIN ST.) — ID #: 600580

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct Route 117 (Main Street), from I-495 to the Stow town-line.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $1,500,000 |
| Total Funds: | $1,500,000 |

BOSTON — BRIGHTON AVE. — ID #: 008105

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct Brighton Avenue from Packard's Corner, Brighton, to Union Square, Allston.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $2,500,000 |
| Total Funds: | $2,500,000 |

BOSTON — CAMBRIDGE, TREMONT & WASHINGTONS STS. — ID #: Pending

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct Cambridge Street, Tremont Street, and Washington Street from Union Square to the Newton city-line.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $12,000,000 |
| Total Funds: | $12,000,000 |

BOSTON — COMMONWEALTH AVE. — ID #: 600635

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct Commonwealth Avenue from Packard's Corner to Warren Street. Includes the relocation of Green Line tracks, the installation of lighting, and the provision of access for people with disabilities.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $25,000,000 |
| Total Funds: | $25,000,000 |

BOSTON — MASSACHUSETTS AVE. — ID #: 600636

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Massachusetts Avenue from the Southeast Expressway to Edward Everett Square.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $8,000,000 |
| Total Funds: | $8,000,000 |

BOSTON — SIGNAL CONTROL REPLACEMENT — ID #: Pending

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Implementation
Description: Replace signal controls at 44 locations.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $3,500,000 |
| Total Funds: | $3,500,000 |

BOSTON — SIGNAL CONTROL REPLACEMENT — ID #: Pending

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Replace signal controls at 54 locations.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $1,800,000 |
| Total Funds: | $1,800,000 |

BROOKLINE — FIRE STATIONS 6 & 7 — ID #: Pending

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Improve the intersections for the fire stations on Washington Street and Hammond Street.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $150,000 |
| Total Funds: | $150,000 |

BROOKLINE — HARVARD ST.-MARION ST. — ID #: Pending

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Implementation
Description: Improve signals at the intersection of Harvard Street and Marion Street

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $70,000 |
| Total Funds: | $70,000 |

BROOKLINE — NEWTON ST.-GROVE ST. — ID #: Pending

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Implementation
Description: Improve signals at intersection of Newton Street and Grove Street.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $400,000 |
| Total Funds: | $400,000 |

BURLINGTON — RTE. 3 — ID #: Pending

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Preliminary Design & Engineering
Description: This project is funded for $3 million in the Transportation Bond Bill (includes construction costs). This portion of the project includes Preliminary Design and Engineering only.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $500,000 |
| Total Funds: | $500,000 |

BURLINGTON — RTE. 62 (BEDFORD ST.) — ID #: 600526

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Route 62 (Bedford Street) from Francis Wyman Road to the Bedford town-line, and perform related work.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $155,000 |
| Total Funds: | $155,000 |

CAMBRIDGE — MASSACHUSETTS AVE. — ID #: 600300

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct Massachusetts Avenue from Lafayette Square to Memorial Drive, and perform related work (e.g., install signals, improve intersections).

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $5,500,000 |
| Total Funds: | $5,500,000 |

CARLISLE — RTE. 225 — ID #: 600449

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Route 225 (Westford Road) from the Westford town-line to Munroe Hill Road, and perform related work.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $80,000 |
| Total Funds: | $80,000 |

CHELSEA — EASTERN AVENUE CORRIDOR — ID #: Pending

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Make various improvements to Eastern Avenue.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $2,500,000 |
| Total Funds: | $2,500,000 |

DEDHAM — RTE. 1, 2 BRIDGES — ID #: 075411

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct the Route 1 Bridge (D-5-30) over Williams Street and the Route 1 Bridge (D-5-29) over Route 135 (High Street).

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $1,000,000 |
| Total Funds: | $1,000,000 |

DOVER — DOVER RD. BRIDGE — ID #: 600744

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct the Dover Road Bridge (D-10-2 = N-4-9). Work for this project will also occur in Needham.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $300,000 |
| Total Funds: | $300,000 |

FOXBOROUGH — NORTH ST. — ID #: 600283

**Funding Program:** **NON-FEDERAL AID**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct North Street from Route 1 to Route 140, and improve intersections, sidewalks, and drainage.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $3,500,000 |
| Total Funds: | $3,500,000 |

FRAMINGHAM — RTE. 30 (COCHITUATE RD.)-SPEEN ST. — ID #: 110952

**Funding Program:** **NON-FEDERAL AID**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Improve the intersection of Route 30 (Cochituate Road) and Speen Street.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $1,600,000 |
| Total Funds: | $1,600,000 |

FRAMINGHAM — RTE. 9-CALDOR RD. & W. PARK DR. — ID #: 600504

**Funding Program:** **NON-FEDERAL AID**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Improve the intersections of Route 9 at Caldor Road and at West Park Drive.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $400,000 |
| Total Funds: | $400,000 |

FRAMINGHAM — RTE.135 (WAVERLY ST.) — ID #: 600577

**Funding Program:** **NON-FEDERAL AID**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Route 135 (Waverly Street), and perform related work.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $2,000,000 |
| Total Funds: | $2,000,000 |

FRANKLIN — UNION ST.-KING ST. — ID #: Pending

**Funding Program:** **NON-FEDERAL AID**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Improve the intersection of Union Street and King Street.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $1,700,000 |
| Total Funds: | $1,700,000 |

GLOUCESTER — RTE. 127A — ID #: 600473

**Funding Program:** **NON-FEDERAL AID**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Route 127A (Bass Avenue & Thatcher Road).

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $300,000 |
| Total Funds: | $300,000 |

GLOUCESTER — RTE. 128-BASS AVE. — ID #: 041504

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Install signals and widen Route 128 at Bass Avenue.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $500,000 |
| Total Funds: | $500,000 |

HANOVER — RTE. 123 (WEBSTER ST.) — ID #: 600404

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Route 123 (Webster Street), and perform related work.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $298,550 |
| Total Funds: | $298,550 |

HANOVER — RTE. 53, PHASE 1B — ID #: 114501

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct Route 53.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $4,000,000 |
| Total Funds: | $4,000,000 |

HINGHAM — RTE. 3A BRIDGE — ID #: 600964

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct the Route 3A Bridge (H-15-5) over the MBTA.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $600,000 |
| Total Funds: | $600,000 |

HOLLISTON — RTE 16 -RTE. 126 — ID #: 600571

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Improve the intersection of Route 16 (Washington Street) and Route 126 (Concord Street).

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $500,000 |
| Total Funds: | $500,000 |

HUDSON — MAIN ST. — ID #: Pending

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct Main Street from High Street to the Stow town-line.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $1,250,000 |
| Total Funds: | $1,250,000 |

IPSWICH — DOWNTOWN PARKING — ID #: Pending

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/MBTA
Project Stage: Construction
Description: Construct additional parking in downtown Ipswich.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $150,000 |
| Total Funds: | $150,000 |

IPSWICH — RTE. 1-LINEBROOK RD. — ID #: 600066

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Install signals at the intersection of Route 1 and Linebrook Road.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $150,000 |
| Total Funds: | $150,000 |

MARLBOROUGH — RTE. 20 (EAST) — ID #: Pending

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct Route 20 (East) at Fafard/Indian Hill from Raytheon traffic lights to west of Farm Road.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $1,350,000 |
| Total Funds: | $1,350,000 |

MEDFORD — BOSTON AVE.-COLLEGE AVE. — ID #: Pending

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Improve the intersection of Boston Avenue and College Avenue.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $250,000 |
| Total Funds: | $250,000 |

MIDDLETON — RTE. 62 (MAPLE ST.) — ID #: 118601

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Improve the geometrics and signals on Route 62 (Maple Street) from the Ipswich Riverr to the Danvers town-line.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $2,000,000 |
| Total Funds: | $2,000,000 |

MILFORD — DILLA ST.-PURCHASE ST. — ID #: 600631

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Improve the intersection of Dilla Street and Purchase Street.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $200,000 |
| Total Funds: | $200,000 |

MILFORD — HIGHLAND ST.-WEST ST. — ID #: 600631

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Improve the intersection of Highland Street and West Street.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $500,000 |
| Total Funds: | $500,000 |

MILFORD — WEST FOUNTAIN, FOUNTAIN & CONGRESS STS. — ID #: 600631

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct West Fountain Street, Fountain Street, and Congress Street.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $150,000 |
| Total Funds: | $150,000 |

NATICK — RTE. 135 & RTE. 27 — ID #: 600573

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Route 135 at East Central Street and West Central Street & Route 27 at North Main Street ans South Main Street, and perfrom related work.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $2,500,000 |
| Total Funds: | $2,500,000 |

NORFOLK — MAIN ST. BRIDGE — ID #: 600763

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Replace the Main Street Bridge (N-13-13) over the Stop River.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $350,000 |
| Total Funds: | $350,000 |

NORWOOD — PENDERGAST CIRCLE BRIDGE (NB) — ID #: 600766

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Replace the deck on the northbound Pendergast Circle Bridge (N-25-23) over Route 1.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $400,000 |
| Total Funds: | $400,000 |

NORWOOD — PENDERGAST CIRCLE BRIDGE (SB) — ID #: 600767

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Replace the deck on the southbound Pendergast Circle Bridge (N-25-22) over Route 1.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $400,000 |
| Total Funds: | $400,000 |

ROCKPORT — RTE. 127 & RTE. 127A — ID #: 600447

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Route 127 and Route 127A, and perform related work.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $665,000 |
| Total Funds: | $665,000 |

SALEM — IMPROVE SAFETY AT 4 INTERSECTIONS — ID #: 180531

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Improve safety at the following intersections: Route 107 at Swampscott Road; Route 1A at Canal Street & Jefferson Avenue; Essex Street at North Street & Summer Street; and Route 107 at Essex Street & Boston Street.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $1,145,000 |
| Total Funds: | $1,145,000 |

SAUGUS — WALNUT ST. — ID #: 024711

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct a section of Walnut Street, and perform related work.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $1,250,000 |
| Total Funds: | $1,250,000 |

SHERBORN — SOUTH MAIN ST. — ID #: Pending

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct South Main Street from Sawin Street to Route 115.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $500,000 |
| Total Funds: | $500,000 |

SOMERVILLE — CEDAR ST. BRIDGE — ID #: 011600

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Replace the Cedar Street Bridge (S-17-12) over MBTA's New Hampshire Route, Main Line.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $500,000 |
| Total Funds: | $500,000 |

SOMERVILLE — SCHOOL ST. BRIDGE — ID #: 127900

**Funding Program:** **NON-FEDERAL AID**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct the School Street Bridge (S-17-8) over MBTA's New Hampshire Route, Main Line.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $500,000 |
| Total Funds: | $500,000 |

SOMERVILLE — WALNUT ST. BRIDGE — ID #: 137349

**Funding Program:** **NON-FEDERAL AID**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Replace the Walnut Street Bridge (S-17-6) over MBTA's New Hampshire Route, Main Line.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $1,000,000 |
| Total Funds: | $1,000,000 |

STOUGHTON — RTE. 139 BRIDGE — ID #: 600772

**Funding Program:** **NON-FEDERAL AID**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Replace the deck on the Route 139 (Lindelof Way) Bridge (S-28-9) over Route 24.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $500,000 |
| Total Funds: | $500,000 |

SWAMPSCOTT — RTE. 129 (HUMPHREY ST.) — ID #: 600989

**Funding Program:** **NON-FEDERAL AID**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct Route 129 (Humphrey Street) from the Lynn city-line to Puritan Road.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $900,000 |
| Total Funds: | $900,000 |

WALPOLE — RTE. 1A — ID #: 600671

**Funding Program:** **NON-FEDERAL AID**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Route 1A, and perform related work.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $3,000,000 |
| Total Funds: | $3,000,000 |

WALTHAM — BUS PURCHASE — ID #: Pending

**Funding Program:** **NON-FEDERAL AID**
Recipient/Sub-Recipient: MHD/Community
Project Stage: N/A
Description:

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $100,000 |
| Total Funds: | $100,000 |

WALTHAM — RTE. 117 (MAIN ST).-BEAR HILL RD. — ID #: 600644

**Funding Program:** **NON-FEDERAL AID**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Improve the intersection of Main Street and Bear Hill Road. Includes the rehabilitation of the Route 117 (Main Street) Bridge (W-4-28) over I-95.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $800,000 |
| Total Funds: | $800,000 |

WATERTOWN — RTE. 20 (NORTH BEACON ST.) — ID #: 600745

**Funding Program:** **NON-FEDERAL AID**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct Route 20 (North Beacon Street).

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $1,000,000 |
| Total Funds: | $1,000,000 |

WELLESLEY — ROCKLAND ST. BRIDGE — ID #: 600776

**Funding Program:** **NON-FEDERAL AID**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Replace the Rockland Street bridge (W13-7) over Conrail.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $300,000 |
| Total Funds: | $300,000 |

WESTWOOD — GAY ST. — ID #: Pending

**Funding Program:** **NON-FEDERAL AID**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct Gay Street from Route 1A (Washington Street) to Milk Street.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $1,200,000 |
| Total Funds: | $1,200,000 |

WESTWOOD — HIGH ST. — ID #: Pending

**Funding Program:** **NON-FEDERAL AID**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct High Street from Summer Street to Gay Street.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $1,560,000 |
| Total Funds: | $1,560,000 |

WESTWOOD — NAHATAN ST. — ID #: 600272

**Funding Program:** **NON-FEDERAL AID**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct Nahatan Street from High Street to the Norwood town-line.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $1,000,000 |
| Total Funds: | $1,000,000 |

WESTWOOD — OAK ST. — ID #: Pending

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct Oak Street from Pond Street to Spruce Street.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $560,000 |
| Total Funds: | $560,000 |

WESTWOOD — POND ST. — ID #: Pending

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct Pond Street from Clapboardtree Street to High Street/Nahaton Street.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $840,000 |
| Total Funds: | $840,000 |

WESTWOOD — RTE. 1A TURNBACK — ID #: 600779

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct the Route 1A turnback.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $1,500,000 |
| Total Funds: | $1,500,000 |

WEYMOUTH — COLUMBIAN ST. BRIDGE — ID #: 015860

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct the Columbian Street Bridge (W32-9) over the Bay Colony Railroad, and perform related work.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $750,000 |
| Total Funds: | $750,000 |

WINTHROP — RTE. 145 — ID #: 600523

**Funding Program:** NON-FEDERAL AID
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Route 145 from Upland Road to Main Street, and perform related work.

| | |
|---|---|
| Federal Funds: | $0 |
| State Funds: | $520,000 |
| Total Funds: | $520,000 |

SOUTH SHORE — OLD COLONY RESTORATION — ID #: N/A

**Funding Program:** SECTION 3 (FIXED GUIDEWAY)
Recipient/Sub-Recipient: MBTA/Same
Project Stage: Construction
Description: The MBTA is restoring commuter rail service on the Old Colony lines (Middleborough/Plymouth).

| | |
|---|---|
| Federal Funds: | $52,594,063 |
| State Funds: | $13,148,516 |
| Total Funds: | $65,742,579 |

CAPE ANN — GLOUCESTER INTERMODAL RAIL STATION — ID #: N/A

**Funding Program:** **SECTION 3 (LIVABLE COMMUNITY INITIATIVE)**
Recipient/Sub-Recipient: CATA/Same
Project Stage: Design & Engineering
Description: Perform preliminary engineering and design of the Gloucester Intermodal Rail Station. Funding for this project is contingent on the award of a grant from FTA.

| | |
|---|---|
| Federal Funds: | $480,000 |
| State Funds: | $120,000 |
| Total Funds: | $600,000 |

BOSTON — SOUTH BOSTON PIERS TRANSITWAY — ID #: N/A

**Funding Program:** **SECTION 3 (NEW STARTS)**
Recipient/Sub-Recipient: MBTA/Same
Project Stage: Design & Construction
Description: The MBTA is proposing to develop a transit link between South Station and the South Boston Piers area.

| | |
|---|---|
| Federal Funds: | $86,200,000 |
| State Funds: | $21,550,000 |
| Total Funds: | $107,750,000 |

BOSTON — BOSTON ENGINE TERMINAL, PHASE 2 — ID #: N/A

**Funding Program:** **SECTION 9 (CAPITAL)**
Recipient/Sub-Recipient: MBTA/Same
Project Stage: Construction
Description: Reconstruct the MBTA's commuter-rail maintenance facility. [Assumes FTA approval of a capital lease.]

| | |
|---|---|
| Federal Funds: | $16,000,000 |
| State Funds: | $4,000,000 |
| Total Funds: | $20,000,000 |

BOSTON — YARD, TRACK, & SIGNAL MODIFICATION — ID #: N/A

**Funding Program:** **SECTION 9 (CAPITAL)**
Recipient/Sub-Recipient: MBTA/Same
Project Stage: Construction
Description: Install new tracks, signals, and communication systems at 6 locations within the 5 yards of the South Station area.

| | |
|---|---|
| Federal Funds: | $23,993,841 |
| State Funds: | $5,998,460 |
| Total Funds: | $29,992,301 |

CANTON — CANTON VIADUCT — ID #: N/A

**Funding Program:** **SECTION 9 (CAPITAL)**
Recipient/Sub-Recipient: MBTA/Same
Project Stage: Construction
Description: Improve the Canton Viaduct to support high-speed, commuter-rail service.

| | |
|---|---|
| Federal Funds: | $4,000,000 |
| State Funds: | $1,000,000 |
| Total Funds: | $5,000,000 |

CAPE ANN — CATA SUPPORT EQUIPMENT AND SERVICES — ID #: N/A

**Funding Program:** **SECTION 9 (CAPITAL)**
Recipient/Sub-Recipient: CATA/Same
Project Stage: Implementation
Description: Purchase support equipment and services.

| | |
|---|---|
| Federal Funds: | $30,000 |
| State Funds: | $7,500 |
| Total Funds: | $37,500 |

BOSTON REGION — MBTA OPERATING ASSISTANCE — ID #: N/A

**Funding Program:** **SECTION 9 (OPERATING)**
Recipient/Sub-Recipient: MBTA/Same
Project Stage: Implementation
Description: The MBTA is eligible for operating assistance under FTA's Section 9 Formula Program which aids the annual operation budget.

| | |
|---|---|
| Federal Funds: | $18,210,443 |
| State Funds: | $18,210,443 |
| Total Funds: | $36,420,886 |

CAPE ANN — CATA OPERATING ASSISTANCE — ID #: N/A

**Funding Program:** **SECTION 9 (OPERATING)**
Recipient/Sub-Recipient: CATA/Same
Project Stage: Implementation
Description: CATA is eligible for operating assistance under FTA's Section 9 Formula Program which aids the annual operating budget for transit service provided in the MBTA service district.

| | |
|---|---|
| Federal Funds: | $45,000 |
| State Funds: | $45,000 |
| Total Funds: | $90,000 |

BOSTON — CENTRAL ARTERY/THIRD HARBOR TUNNEL — ID #: 195001

**Funding Program:** **STP/STATEWIDE**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: This portion of the project includes the proposed phased obligation of $15,000,000 for Contract # C12A3; $18,750,000 for the proposed phased obligation of Contract # C15A3; and$67,846,500 for other portions of the project.

| | |
|---|---|
| Federal Funds: | $81,277,200 |
| State Funds: | $20,319,300 |
| Total Funds: | $101,596,500 |

## PROJECTS DELAYED FROM THE FY 1996 ELEMENT OF THE 1995-1997 TRANSPORTATION IMPROVEMENT PROGRAM

### Program Summary

| Funding Program | # of Projects | Federal Funds Programmed | Matching Funds Programmed | Total Funds Programmed |
|---|---|---|---|---|
| Bridge Program (Off-System) | 4 | $ 1,519,200 | $ 379,800 | $ 1,899,000 |
| Congestion Mitigation/Air Quality Improvement | 11 | $18,614,142 | $ 4,653,536 | $23,267,678 |
| Interstate Maintenance | 3 | $ 9,810,000 | $ 1,090,000 | $10,900,000 |
| Interstate Transfer | 1 | $ 609,388 | $ 107,539 | $ 716,927 |
| Surface Transportation Program /Boston Earmark | 15 | $ 5,860,400 | $ 1,465,100 | $ 7,325,500 |
| Surface Transportation Program/Enhancement | 13 | $ 6,438,853 | $ 1,609,713 | $ 8,048,566 |
| Surface Transportation Program/Rural | 2 | $ 420,000 | $ 105,000 | $ 525,000 |
| Surface Transportation Program/Safety | 8 | $ 1,568,000 | $ 392,000 | $ 1,960,000 |
| Surface Transportation Program/Statewide | 12 | $ 3,812,216 | $ 953,054 | $ 4,765,270 |
| **Total** | **69** | **$48,652,199** | **$10,755,742** | **$59,407,941** |

# PROJECTS DELAYED FROM 1996

ASHLAND — FOUNTAIN STREET BRIDGE — ID #: 026703

**Funding Program:** **BRIDGE (OFF-SYSTEM)**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Replace the Fountain Street Bridge (A-14-11) over Conrail, Boston and Albany Line.

| | |
|---|---|
| Federal Funds: | $480,000 |
| State Funds: | $120,000 |
| Total Funds: | $600,000 |

BOSTON — IPSWICH ST. BRIDGE — ID #: 600731

**Funding Program:** **BRIDGE (OFF-SYSTEM)**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Replace the Ipswich Street Bridge (B-16-401) over the Muddy River.

| | |
|---|---|
| Federal Funds: | $240,000 |
| State Funds: | $60,000 |
| Total Funds: | $300,000 |

BOSTON — PARK STREET BRIDGE — ID #: 055750

**Funding Program:** **BRIDGE (OFF-SYSTEM)**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Replace the Park Street Bridge (B-16-116) over the MBTA Dorchester Branch, and perform related work.

| | |
|---|---|
| Federal Funds: | $399,200 |
| State Funds: | $99,800 |
| Total Funds: | $499,000 |

DOVER — BRIDGE ST. BRIDGE — ID #: 600746

**Funding Program:** **BRIDGE (OFF-SYSTEM)**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct the Bridge Street Bridge (D-10-1=S-12-2) over the Charles River. Work for this project will also occur in Sherborn.

| | |
|---|---|
| Federal Funds: | $400,000 |
| State Funds: | $100,000 |
| Total Funds: | $500,000 |

BOSTON — LOGAN AIRPORT PARKING — ID #: Pending

**Funding Program:** **CONGESTION MITIGATION/AIR QUALITY IMPROVEMENT**
Recipient/Sub-Recipient: MHD/Massport
Project Stage: Construction
Description: Construct a remote parking facility at Logan International Airport.

| | |
|---|---|
| Federal Funds: | $1,600,000 |
| State Funds: | $400,000 |
| Total Funds: | $2,000,000 |

BOSTON — SOUTHEAST EXPRESSWAY HOV LANE, PHASE 2 — ID #: Pending

**Funding Program:** **CONGESTION MITIGATION/AIR QUALITY IMPROVEMENT**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Construct a high-occupancy-vehicle (HOV) lane for the Southeast Expressway.

| | |
|---|---|
| Federal Funds: | $760,000 |
| State Funds: | $190,000 |
| Total Funds: | $950,000 |

# PROJECTS DELAYED FROM 1996

BOSTON REGION — CLEAN CITIES, PROJECT 2, PHASE 2 — ID #: Pending

**Funding Program:** **CONGESTION MITIGATION/AIR QUALITY IMPROVEMENT**
Recipient/Sub-Recipient: MHD/Community
Project Stage: Implementation
Description: Fund the cost-differentiial of purchasing alternative-fuel vehicles, establish fueling stations, and conduct training.

| | |
|---|---|
| Federal Funds: | $2,812,800 |
| State Funds: | $703,200 |
| Total Funds: | $3,516,000 |

BOSTON REGION — CLEAN CITIES, PROJECT 3 — ID #: Pending

**Funding Program:** **CONGESTION MITIGATION/AIR QUALITY IMPROVEMENT**
Recipient/Sub-Recipient: MHD/Community
Project Stage: Implementation
Description: Fund the cost-differential of purchasing alternative-fuel vehicles and establish fueling stations in Cambridge and the Cape Ann region.

| | |
|---|---|
| Federal Funds: | $800,000 |
| State Funds: | $200,000 |
| Total Funds: | $1,000,000 |

BOSTON REGION — INCIDENT MANAGEMENT, PHASE 2 — ID #: Pending

**Funding Program:** **CONGESTION MITIGATION/AIR QUALITY IMPROVEMENT**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Implementation
Description: Expand the existing Incident Management Porgram in the region.

| | |
|---|---|
| Federal Funds: | $800,000 |
| State Funds: | $200,000 |
| Total Funds: | $1,000,000 |

BOSTON REGION — MHD PARK & RIDE FACILITIES — ID #: Pending

**Funding Program:** **CONGESTION MITIGATION/AIR QUALITY IMPROVEMENT**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Construct park & ride facilities for vanpools and express buses.

| | |
|---|---|
| Federal Funds: | $3,004,316 |
| State Funds: | $751,080 |
| Total Funds: | $3,755,396 |

BOSTON REGION — MOTORIST ASSISTANCE PROGRAM, PHASE 2 — ID #: Pending

**Funding Program:** **CONGESTION MITIGATION/AIR QUALITY IMPROVEMENT**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Implementation
Description: Expand the existing Motorist Assistance Program in the region.

| | |
|---|---|
| Federal Funds: | $1,200,000 |
| State Funds: | $300,000 |
| Total Funds: | $1,500,000 |

BOSTON REGION — TMAs FORMATION, PHASE 2 — ID #: Pending

**Funding Program:** **CONGESTION MITIGATION/AIR QUALITY IMPROVEMENT**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Implementation
Description: Provide financial assistance for the formation of new Transportation Management Associations.

| | |
|---|---|
| Federal Funds: | $206,113 |
| State Funds: | $51,528 |
| Total Funds: | $257,641 |

# PROJECTS DELAYED FROM 1996

BOSTON REGION — TMAs, NEW INITIATIVES, PHASE 2 — ID #: Pending

**Funding Program:** CONGESTION MITIGATION/AIR QUALITY IMPROVEMENT
Recipient/Sub-Recipient: MHD/Same
Project Stage: Implementation
Description: Fund new initiatives of Transportation Mangement Associations.

| | |
|---|---|
| Federal Funds: | $590,913 |
| State Funds: | $147,728 |
| Total Funds: | $738,641 |

SOUTH SHORE — OLD COLONY RESTORATION — ID #: N/A

**Funding Program:** CONGESTION MITIGATION/AIR QUALITY IMPROVEMENT
Recipient/Sub-Recipient: MBTA/Same
Project Stage: Construction
Description: The MBTA is restoring commuter rail service on the Old Colony lines (Middleborough/Plymouth).

| | |
|---|---|
| Federal Funds: | $5,400,000 |
| State Funds: | $1,350,000 |
| Total Funds: | $6,750,000 |

STATEWIDE — TRANSPORTATION DEMAND MANAGEMENT, PHASE 2 — ID #: Pending

**Funding Program:** CONGESTION MITIGATION/AIR QUALITY IMPROVEMENT
Recipient/Sub-Recipient: MHD/Same
Project Stage: Implementation
Description: This funding is the total amount available in the state and is required to be listed in each MPO's TIP. Some or all of these funds may or may not be spent in the Boston Region.

| | |
|---|---|
| Federal Funds: | $1,440,000 |
| State Funds: | $360,000 |
| Total Funds: | $1,800,000 |

FRANKLIN — I-495, FRANKLIN TO MANSFIELD — ID #: 600161

**Funding Program:** INTERSTATE MAINTENANCE
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct existing concrete surface of I-495, from Franklin to Foxborough. Work for this project will also occur in Wrentham, Plainville, Foxboroguh & Mansfield.

| | |
|---|---|
| Federal Funds: | $4,500,000 |
| State Funds: | $500,000 |
| Total Funds: | $5,000,000 |

LEXINGTON — ROUTE 2 BRIDGE — ID #: 600703

**Funding Program:** INTERSTATE MAINTENANCE
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Rehabilitate the Route 2 Bridge (L-10-9) over I-95 (Route 128).

| | |
|---|---|
| Federal Funds: | $2,700,000 |
| State Funds: | $300,000 |
| Total Funds: | $3,000,000 |

MILTON — I-93 NOISE BARRIERS, MILTON TO QUINCY — ID #: 071715

**Funding Program:** INTERSTATE MAINTENANCE
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Install noise barriers on I-93, Northbound and Southbound, from Milton to Quincy. Work for this project will also occur in Quincy.

| | |
|---|---|
| Federal Funds: | $2,610,000 |
| State Funds: | $290,000 |
| Total Funds: | $2,900,000 |

## PROJECTS DELAYED FROM 1996

SOUTH SHORE — OLD COLONY RESTORATION — ID #: N/A

**Funding Program:** INTERSTATE TRANSFER
Recipient/Sub-Recipient: MBTA/Same
Project Stage: Construction
Description: The MBTA is restoring commuter rail service on the Old Colony lines (Middleborough/Plymouth).

| | |
|---|---|
| Federal Funds: | $609,388 |
| State Funds: | $107,539 |
| Total Funds: | $716,927 |

BOSTON — SIGNAL CONTROL REPLACEMENT — ID #: 600184

**Funding Program:** STP/BOSTON
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Replace signal controls at 300 intersections.

| | |
|---|---|
| Federal Funds: | $2,400,000 |
| State Funds: | $600,000 |
| Total Funds: | $3,000,000 |

CAMBRIDGE — ENTERPISE ZONE BUS SYSTEM — ID #: Pending

**Funding Program:** STP/BOSTON
Recipient/Sub-Recipient: MHD/Community
Project Stage: Implementation
Description: Purchase buses and build refueling infrastructure.

| | |
|---|---|
| Federal Funds: | $1,200,000 |
| State Funds: | $300,000 |
| Total Funds: | $1,500,000 |

CAPE ANN — CATA BUS PURCHASE — ID #: N/A

**Funding Program:** STP/BOSTON
Recipient/Sub-Recipient: CATA/Same
Project Stage: Implementation
Description: Purchase 4 buses.

| | |
|---|---|
| Federal Funds: | $720,000 |
| State Funds: | $180,000 |
| Total Funds: | $900,000 |

LEXINGTON — LEXPRESS TRANSIT VEHICLE PURCHASE — ID #: Pending

**Funding Program:** STP/BOSTON
Recipient/Sub-Recipient: MHD/Community
Project Stage: Implementation
Description: Purcahse transit vehicles.

| | |
|---|---|
| Federal Funds: | $368,000 |
| State Funds: | $92,000 |
| Total Funds: | $460,000 |

MEDFORD — WELLINGTON STATION PEOPLE-MOVER — ID #: N/A

**Funding Program:** STP/BOSTON
Recipient/Sub-Recipient: MBTA/Same
Project Stage: Construction
Description: Install a people-mover at Wellington Station.

| | |
|---|---|
| Federal Funds: | $720,000 |
| State Funds: | $180,000 |
| Total Funds: | $900,000 |

# PROJECTS DELAYED FROM 1996

SWAMPSCOTT — ATLANTIC AVE. — ID #: Pending

**Funding Program:** **STP/BOSTON**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Atlantic Avenue from Paradise Road to the Lynn town-line.

| | |
|---|---|
| Federal Funds: | $42,400 |
| State Funds: | $10,600 |
| Total Funds: | $53,000 |

SWAMPSCOTT — BURPEE RD. — ID #: Pending

**Funding Program:** **STP/BOSTON**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Burpee Road from Essex Street to Jessie Street.

| | |
|---|---|
| Federal Funds: | $8,800 |
| State Funds: | $2,200 |
| Total Funds: | $11,000 |

SWAMPSCOTT — ESSEX ST. — ID #: Pending

**Funding Program:** **STP/BOSTON**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Essex Street from the Lynn town-line to the Salem town-line.

| | |
|---|---|
| Federal Funds: | $56,800 |
| State Funds: | $14,200 |
| Total Funds: | $71,000 |

SWAMPSCOTT — FARRAGUT RD. — ID #: Pending

**Funding Program:** **STP/BOSTON**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Farragut Road from Monument Avenue to Paradise Road.

| | |
|---|---|
| Federal Funds: | $11,200 |
| State Funds: | $2,800 |
| Total Funds: | $14,000 |

SWAMPSCOTT — FOREST AVE. — ID #: Pending

**Funding Program:** **STP/BOSTON**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Forest Avenue from the dead-end to Greenwood Avenue.

| | |
|---|---|
| Federal Funds: | $92,000 |
| State Funds: | $23,000 |
| Total Funds: | $115,000 |

SWAMPSCOTT — HUMPHREY ST. — ID #: Pending

**Funding Program:** **STP/BOSTON**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Humphrey Street from Millett Road to the Marblehead town-line.

| | |
|---|---|
| Federal Funds: | $60,000 |
| State Funds: | $15,000 |
| Total Funds: | $75,000 |

## PROJECTS DELAYED FROM 1996

SWAMPSCOTT — PHILLIPS AVE. — ID #: Pending

**Funding Program:** **STP/BOSTON**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Phillips Avenue from Ocean Avenue to Atlantic Avenue.

| | |
|---|---|
| Federal Funds: | $68,800 |
| State Funds: | $17,200 |
| Total Funds: | $86,000 |

SWAMPSCOTT — PLEASANT ST. — ID #: Pending

**Funding Program:** **STP/BOSTON**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Pleasant Street from Humphrey Street to Sargent Road.

| | |
|---|---|
| Federal Funds: | $16,800 |
| State Funds: | $4,200 |
| Total Funds: | $21,000 |

SWAMPSCOTT — PURITAN RD. — ID #: Pending

**Funding Program:** **STP/BOSTON**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Puritan Road.

| | |
|---|---|
| Federal Funds: | $47,600 |
| State Funds: | $11,900 |
| Total Funds: | $59,500 |

SWAMPSCOTT — REDINGTON ST. — ID #: Pending

**Funding Program:** **STP/BOSTON**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Redington Street from Forest Avenue to Humphrey Street.

| | |
|---|---|
| Federal Funds: | $48,000 |
| State Funds: | $12,000 |
| Total Funds: | $60,000 |

BOSTON — BICYCLE PATH — ID #: Pending

**Funding Program:** **STP/ENHANCEMENT**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Construct a bicycle path from the Neponset River Bridge to Dorchester Lower Mills.

| | |
|---|---|
| Federal Funds: | $960,000 |
| State Funds: | $240,000 |
| Total Funds: | $1,200,000 |

BOSTON — SOUTH ST. PEDESTIRAN WAY — ID #: Pending

**Funding Program:** **STP/ENHANCEMENT**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Construct a pedestrian way on South Street from the Forest Hills MBTA Station to the Arnold Arboretum.

| | |
|---|---|
| Federal Funds: | $312,800 |
| State Funds: | $78,200 |
| Total Funds: | $391,000 |

## PROJECTS DELAYED FROM 1996

CAMBRIDGE — ALEWIFE/FRESH POND CORRIDOR — ID #: Pending

**Funding Program:** **STP/ENHANCEMENT**
Recipient/Sub-Recipient: MHD/Community
Project Stage: Construction
Description: Perform intermodal improvements.

| | |
|---|---|
| Federal Funds: | $1,188,000 |
| State Funds: | $297,000 |
| Total Funds: | $1,485,000 |

CHELSEA — BICYCLE PATH & PEDESTRIAN WALKWAY — ID #: Pending

**Funding Program:** **STP/ENHANCEMENT**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Construct a bicycle path and pedestrian way from Eastern Avenue to the Washington Street Commuter Rail Station.

| | |
|---|---|
| Federal Funds: | $240,000 |
| State Funds: | $60,000 |
| Total Funds: | $300,000 |

FRAMINGHAM — DOWNTOWN STREETSCAPE — ID #: Pending

**Funding Program:** **STP/ENHANCEMENT**
Recipient/Sub-Recipient: MHD/Community
Project Stage: Construction
Description: Improve sidewalks, ramps, signage, and landscaping.

| | |
|---|---|
| Federal Funds: | $65,578 |
| State Funds: | $16,395 |
| Total Funds: | $81,973 |

LYNNFIELD — REEDY MEADOW — ID #: Pending

**Funding Program:** **STP/ENHANCEMENT**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Right-of-Way Acquisition
Description:

| | |
|---|---|
| Federal Funds: | $320,000 |
| State Funds: | $80,000 |
| Total Funds: | $400,000 |

NEWTON — BICYCLE TRAILS PROJECT — ID #: Pending

**Funding Program:** **STP/ENHANCEMENT**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Install signs along various routes; provide street markings for bicycle lanes; and, reproduce a bicycle map for public distribution.

| | |
|---|---|
| Federal Funds: | $4,000 |
| State Funds: | $1,000 |
| Total Funds: | $5,000 |

PEABODY — BIKEWAY & GREENWAY — ID #: Pending

**Funding Program:** **STP/ENHANCEMENT**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description:

| | |
|---|---|
| Federal Funds: | $1,205,837 |
| State Funds: | $301,459 |
| Total Funds: | $1,507,296 |

## PROJECTS DELAYED FROM 1996

PEABODY — RIVERWALK — ID #: Pending

**Funding Program:** **STP/ENHANCEMENT**
Recipient/Sub-Recipient: MHD/Community
Project Stage: Construction
Description:

| | |
|---|---|
| Federal Funds: | $1,258,752 |
| State Funds: | $314,688 |
| Total Funds: | $1,573,440 |

SALEM — MULTI-PURPOSE TRAIL SYSTEM — ID #: Pending

**Funding Program:** **STP/ENHANCEMENT**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description:

| | |
|---|---|
| Federal Funds: | $729,486 |
| State Funds: | $182,371 |
| Total Funds: | $911,857 |

SALEM — SIGNS, MARKERS & BROCHURES — ID #: Pending

**Funding Program:** **STP/ENHANCEMENT**
Recipient/Sub-Recipient: MHD/Same
Project Stage: N/A
Description:

| | |
|---|---|
| Federal Funds: | $68,000 |
| State Funds: | $17,000 |
| Total Funds: | $85,000 |

SOMERVILLE — BICYCLE PATH — ID #: Pending

**Funding Program:** **STP/ENHANCEMENT**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Extend the bicycle path.

| | |
|---|---|
| Federal Funds: | $40,000 |
| State Funds: | $10,000 |
| Total Funds: | $50,000 |

WEYMOUTH — PURITAN RD. POLLUTION CONTROL — ID #: Pending

**Funding Program:** **STP/ENHANCEMENT**
Recipient/Sub-Recipient: MHD/Community
Project Stage: Construction
Description: Control storm water pollution.

| | |
|---|---|
| Federal Funds: | $46,400 |
| State Funds: | $11,600 |
| Total Funds: | $58,000 |

IPSWICH — RTES. 1A & 133 (CENTRAL ST. & HIGH ST.) — ID #: 600458

**Funding Program:** **STP/RURAL**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Route 1A (Central Street) and Route 133 (High Street) from Choates Bridge to the High Street Bridge, and perform related work.

| | |
|---|---|
| Federal Funds: | $220,000 |
| State Funds: | $55,000 |
| Total Funds: | $275,000 |

# PROJECTS DELAYED FROM 1996

TOPSFIELD — RTE. 1-RTE. 97 — ID #: 600596

**Funding Program:** **STP/RURAL**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Upgrade the signals at the intersection of Route1 and Route 97.

| | |
|---|---|
| Federal Funds: | $200,000 |
| State Funds: | $50,000 |
| Total Funds: | $250,000 |

BEDFORD — RTE. 62-RTE. 3 — ID #: 108504

**Funding Program:** **STP/SAFETY**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Improve safety at the intersection of Route 62 and Route 3.

| | |
|---|---|
| Federal Funds: | $240,000 |
| State Funds: | $60,000 |
| Total Funds: | $300,000 |

BOSTON — ALBANY ST.-SOUTHEAST EXPRESSWAY — ID #: 600002

**Funding Program:** **STP/SAFETY**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Improve the intersection of Albany Street and the Southeast Expressway southbound ramp.

| | |
|---|---|
| Federal Funds: | $720,000 |
| State Funds: | $180,000 |
| Total Funds: | $900,000 |

BURLINGTON — RTE. 3A-FRANCIS WYMAN RD. — ID #: 600592

**Funding Program:** **STP/SAFETY**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Improve signals at Route 3A and Francis Wyman Road.

| | |
|---|---|
| Federal Funds: | $48,000 |
| State Funds: | $12,000 |
| Total Funds: | $60,000 |

GLOUCESTER — WESTERN AVE.-CENTENNIAL AVE. — ID #: 086601

**Funding Program:** **STP/SAFETY**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Improve the signalization at the intersection of Western Avenue and Centennial Avenue at the Blyman Canal Bridge.

| | |
|---|---|
| Federal Funds: | $120,000 |
| State Funds: | $30,000 |
| Total Funds: | $150,000 |

LYNN — WESTERN AVE.-CENTRE ST. — ID #: 600040

**Funding Program:** **STP/SAFETY**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Improve the intersection of Western Avenue and Centre Street.

| | |
|---|---|
| Federal Funds: | $80,000 |
| State Funds: | $20,000 |
| Total Funds: | $100,000 |

## PROJECTS DELAYED FROM 1996

LYNNFIELD — SALEM ST.-WALNUT ST. — ID #: 600641

**Funding Program:** STP/SAFETY
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Improve the intersection of Salem Street and Walnut Street.

| | |
|---|---|
| Federal Funds: | $280,000 |
| State Funds: | $70,000 |
| Total Funds: | $350,000 |

PEABODY — LYNN ST.-COUNTY ST. — ID #: Pending

**Funding Program:** STP/SAFETY
Recipient/Sub-Recipient: MHD/Same
Project Stage: Implementation
Description: Install traffic signals at the intersection of Lynn Street and County Street.

| | |
|---|---|
| Federal Funds: | $80,000 |
| State Funds: | $20,000 |
| Total Funds: | $100,000 |

HUDSON — RTE. 62 (CENTRAL ST.) — ID #: 600575

**Funding Program:** STP/STATEWIDE
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Route 62 (Central Street) from Coolidge Street to Wilkins Street.

| | |
|---|---|
| Federal Funds: | $1,200,000 |
| State Funds: | $300,000 |
| Total Funds: | $1,500,000 |

HULL — RTE. 228 (NANTASKET AVE.) — ID #: 600414

**Funding Program:** STP/STATEWIDE
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Route 228 (Nantasket Avenue), and perform related work.

| | |
|---|---|
| Federal Funds: | $80,000 |
| State Funds: | $20,000 |
| Total Funds: | $100,000 |

MARLBOROUGH — RTE. 20 (EAST) — ID #: 600630

**Funding Program:** STP/STATEWIDE
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct Route 20 (East) from Concord Road to Wilson Street.

| | |
|---|---|
| Federal Funds: | $960,000 |
| State Funds: | $240,000 |
| Total Funds: | $1,200,000 |

NEWTON — RTE. 16 (WASHINGTON ST.) — ID #: 600894

**Funding Program:** STP/STATEWIDE
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct Route 16 (Washington Street) from Route 30 (Commonwealth Avenue) to Route 128.

| | |
|---|---|
| Federal Funds: | $880,000 |
| State Funds: | $220,000 |
| Total Funds: | $1,100,000 |

# PROJECTS DELAYED FROM 1996

NORFOLK — RTE. 115 (ROCKWOOD RD.) — ID #: 600384

**Funding Program:** **STP/STATEWIDE**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Route 115 (Rockwood Road), and perform related work.

| | |
|---|---|
| Federal Funds: | $168,000 |
| State Funds: | $42,000 |
| Total Funds: | $210,000 |

NORWOOD — RTE. 1A (WASHINGTON ST.) — ID #: 600383

**Funding Program:** **STP/STATEWIDE**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Route 1A (Washington Street), and perform related work.

| | |
|---|---|
| Federal Funds: | $97,016 |
| State Funds: | $24,254 |
| Total Funds: | $121,270 |

ROCKPORT — PARK & RIDE FACILITY — ID #: Pending

**Funding Program:** **STP/STATEWIDE**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Construct a park & ride lot on Upper Main Street (Route 127).

| | |
|---|---|
| Federal Funds: | $80,000 |
| State Funds: | $20,000 |
| Total Funds: | $100,000 |

SAUGUS — HAMILTON ST. BRIDGE — ID #: 180506

**Funding Program:** **STP/STATEWIDE**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Reconstruct the Hamilton Street Bridge (S5-14) over the Saugus River, and perform related work.

| | |
|---|---|
| Federal Funds: | $136,000 |
| State Funds: | $34,000 |
| Total Funds: | $170,000 |

SCITUATE — RTE. 123 — ID #: 600355

**Funding Program:** **STP/STATEWIDE**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Route 123 from the Norwell town-line to Chief Justice Cushing Way.

| | |
|---|---|
| Federal Funds: | $51,200 |
| State Funds: | $12,800 |
| Total Funds: | $64,000 |

WALPOLE — RTE. 27 (EAST ST.) — ID #: 600345

**Funding Program:** **STP/STATEWIDE**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Route 27 (East Street) from Main Street to High Plain Street, and perform related work.

| | |
|---|---|
| Federal Funds: | $64,000 |
| State Funds: | $16,000 |
| Total Funds: | $80,000 |

## PROJECTS DELAYED FROM 1996

WESTON — RTE. 117 (NORTH AVE.) — ID #: 600453

**Funding Program:** **STP/STATEWIDE**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface Route 117 (North Avenue) from the Waltham city-line to Church Street.

| | |
|---|---|
| Federal Funds: | $64,000 |
| State Funds: | $16,000 |
| Total Funds: | $80,000 |

WRENTHAM — RTE. 140 (FRANKLIN ST.) — ID #: 600418

**Funding Program:** **STP/STATEWIDE**
Recipient/Sub-Recipient: MHD/Same
Project Stage: Construction
Description: Resurface a section of Route 140 (Franklin Street), and perform related work.

| | |
|---|---|
| Federal Funds: | $32,000 |
| State Funds: | $8,000 |
| Total Funds: | $40,000 |

# 10 AIR QUALITY CONFORMITY ANALYSIS

## 10.1 INTRODUCTION

The Commonwealth of Massachusetts is classified as serious nonattainment for ozone and moderate nonattainment for carbon monoxide (CO) in the communities of Boston, Cambridge, Chelsea, Everett, Malden, Medford, Quincy, Revere, Somerville, and Waltham. With this nonattainment classification, the 1990 Clean Air Act Amendments (CAAA) require the Commonwealth to reduce its emissions of volatile organic compounds (VOCs) and nitrogen oxides (NOx), the two major precursors to ozone formation, to achieve attainment of the ozone standard by 1999. The areas in nonattainment for carbon monoxide (CO) must achieve attainment by 1995.

The CAAA and the Commonwealth acknowledge that mobile sources are among the major sources of emissions of VOCs, NOx and CO. Prior to the 1990 amendments, the majority of pollution control measures focused on stationary industrial sources. The Massachusetts 1990 Emissions Inventory indicates that on-road mobile sources emit approximately 29% of the total VOCs, 40% of the total NOx and 61% of the total CO emissions (summer day) in the state. Mobile source CO emissions on a winter day are approximately 80% of the total statewide CO emissions.

The Commonwealth revised its State Implementation Plan (SIP) which was submitted to the United States Environmental Protection Agency (EPA) on November 15, 1993. This SIP revision is a strategy of programs that will show Reasonable Further Progress of a 15% reduction of VOCs in 1996 toward attainment of the National Ambient Air Quality Standards (NAAQS) for ozone in 1999. A large number of the programs target mobile sources, including an enhanced inspection and maintenance program, reformulated gasoline, and California Low Emissions Vehicle Program. It also included a VOC mobile source emission budget for 1996.

A second major revision to the SIP was submitted to EPA in December 1994. This submission included programs to provide a further reduction of 9% in NOx emissions. NOx reduction credits will be taken from stationary sources through NOx Reasonably Available Control Technology (RACT), and from mobile sources through the Enhanced Inspection and Maintenance Program, the California Low Emission Vehicle Program, and the Tier I Federal Vehicle Standards. A NOx emission budget for 1999 and each year thereafter and a VOC emission budget for 1999 and each year thereafter were included in this submission. The 1999 NOx budget has been set at 215 tons per summer day for the Eastern Ozone Nonattainment area of Massachusetts. The 1999 Eastern

Nonattainment area VOC budget has been set for 106 tons per summer day. In addition, the 1996 VOC budget has been revised to be 121 tons per summer day.

In addition to the VOC and NOx budget information, the Massachusetts Department of Environmental Protection (DEP) also proposed that the carbon monoxide nonattainment areas of Boston, Cambridge, Chelsea, Everett, Malden, Medford, Quincy, Revere, and Somerville be re-classified as attainment. A public hearing on the documentation and proposal was held in September of 1994. DEP submitted this documentation to the United States Environmental Protection Agency (EPA) in December of 1994. In that submission, DEP established CO emission budgets for the nine cities in the Boston area nonattainment area for the years 1995 through 2010.

The CAAA revised the requirements for designated nonattainment Metropolitan Planning Organizations (MPO), to perform conformity determinations for their Transportation Plans and Transportation Improvement Programs (TIP). Section 176 of the CAAA defines conformity to a State Implementation Plan to mean conformity to the plan's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards (NAAQS) and achieving expeditious attainment of the standards. The Boston MPO must certify that all activities outlined in the Transportation Improvement Program (TIP):

- will not cause or contribute to any new violation of any standard in any area
- will not increase the frequency or severity of any existing violation of any standard in any area; and
- will not delay the timely attainment of any standard or any required interim emission reductions or other milestones in any area.

The EPA issued final conformity regulations in the November 24, 1993 Federal Register and Massachusetts DEP issued new conformity regulations effective December 30, 1994. They set forth requirements for determining conformity of Transportation Plans, Transportation Improvement Programs, and individual projects. The conformity regulations allow for a separate conformity determination of the Tranportation Improvement Program if all of the non-exempt projects are not included in the Transportation Plan. A number of signalization projects were not included in the Plan, so a separate conformity determination must be provided for the TIP. In addition, three widening projects (Route 20 widening in Marlborough, Route 53 widening in Hanover, and Route 140 widening in Franklin) are included in the analysis of this TIP. These projects are not regionally significant, therefore they were not included in the Transportation Plan. However, they are non-exempt projects and must therefore be included in the TIP conformity analysis. The requirements are summarized below and will be explained in detail in this conformity determination:

Conformity Criteria

- Horizon Years
- Latest planning assumptions
- Latest emission model used
- Timely implementation of transportation control measures (TCM)
- Conformity in accordance with the consultation procedures and SIP revisions
- Public Participation Procedures
- Financially Constrained Document

Procedures for Determining Regional Transportation Emissions

The Conformity Test

- Contribute to reductions in ozone and CO nonattainment areas
- Consistent with emission budgets set forth in SIP

In addition, the regulations set specific periods and requirements for each period depending on when the state's SIP was submitted to and approved by EPA. These periods are defined below:

***Phase II of the Interim Period*** is the period of time after the effective date of the conformity regulation lasting until submission to EPA of the relevant control strategy implementation plan revisions endorsed by the Governor and subject to public hearing or the date that the CAA requires the relevant strategy to be submitted. Conformity tests in this period include a build/no build (action/baseline) test and emissions lower than the 1990 base emission budget.

***Transitional Period*** is the period of time after state submission of a relevant control strategy and before approval or disapproval of that strategy by EPA. Under the transitional period criteria, the Transportation Plan and TIP must demonstrate conformity within 18 months of the SIP submission due date to EPA otherwise conformity status will lapse. Conformity tests in this period include consistency with the 1996 and 1999 VOC emission budgets, the 1999 NOx emission budget, and the 1995 through 2010 CO emission budgets; build/no build (action/baseline) test; and emissions lower than the 1990 base emission budget.

***Control Strategy Period*** is the period of time after EPA approves the control strategy implementation plan revisions containing strategies for controlling CO and ozone. This period ends when a state submits and EPA approves a request for redesignation to an attainment area. The conformity test in this period is consistency with the emissions budget.

Currently, Massachusetts is in the Transitional Period for VOCs and NOx in the Eastern nonattainment area and for CO in the nine cities in the Boston area CO nonattainment area. Once EPA approves the SIP revisions, the control strategy period will begin.

## 10.2. CONFORMITY DETERMINATION CRITERIA

This conformity determination has been prepared in accordance with 310 CMR Part 60.03 - Final Massachusetts Conformity to the SIP of Transportation Plans, Programs, and Projects. It shows that this TIP has been prepared following all the guidelines and requirements of the rule.

### 10.2.1 Horizon Year Requirements

Horizon years for regional model analysis have been established following Section 60.03(22)b of the Massachusetts Conformity Regulations. The years for which the model was run is shown below.

- 1990 - Milestone Year - This year has been established as the base year in the SIP for calculation of emission reductions of VOCs, NOx and CO
- 1995 - Milestone Year - Attainment Year for CO
- 1996 - Milestone Year - 15% reduction in VOC emissions
- 1999 - Milestone Year - Attainment year
- 2010 - Analysis Year
- 2020 - Analysis Year - forecast year of transportation plan

### 10.2.2 Latest Planning Assumptions

*Population, Employment and Traffic Assumptions*

Section 60.03(11) of the Massachusetts Conformity Regulations outlines the requirements for the most recent planning assumptions that must be in place at the time of the conformity determination. Assumptions must be derived from the estimates of current and future population, employment, travel, and congestion most recently developed by the MPO. Analyses for the TIP are based on U.S. Census data and information obtained from the Metropolitan Area Planning Council and Massachusetts Highway Department. On March 27, 1995, in a public meeting, the Boston MPO reviewed these assumptions. The following is a list of the sources of data used for the TIP analysis.

- **Population:** Summary Tape File 1B Data from the 1990 U.S. Census of Population and Housing.

- **Employment:** Town-level employment from Massachusetts Department of Employment and Training, "Employment and Wages in Massachusetts' Cities and Towns 1981-1990", September, 1991.
  Estimates of employment below town level from factors based upon the Regional Planning Study Site-Level Employment Data Base.

- **Population Forecasts:** Metropolitan Area Planning Council, "Community Population Age Group Forecasts for the Route 128 Study Area", Memorandum January 11, 1991.

- **Employment Forecasts:** Metropolitan Area Planning Council, "Employment Forecasts", Memorandum May 13, 1992.
  Metropolitan Area Planning Council, "Sectoral Employment Forecasts for the Regional Planning Study Area", Memorandum December 17, 1992

- **Households:** Summary Tape File 1B data from the 1990 U.S. Census for Population and Housing.

- **Household Sizes:** Summary Tape File 3A data from the 1990 U.S. Census of Population and Housing.

- **Vehicle Ownership:** Summary Tape File 3A data from the 1990 U.S. Census of Population and Housing.

- **Traffic Volumes:** Massachusetts Highway Department, "1991 Traffic Volumes for the Commonwealth of Massachusetts", September, 1992.
  Additional traffic counts taken by the Massachusetts Highway Department and the Central Transportation Planning Staff.

- **Project-Level Data:** Obtained from the responsible implementing agency.

*Transit Operating Policy Assumptions*

Transit service and ridership statistics presented in the TIP and used in its analysis were obtained from the following publications:

- MBTA's Ridership and Service Statistics published in March 1994

- The Central Artery/Third Harbor Tunnel Regional Transit Mitigation Program prepared by Vanasse Hangen Brusslin for the MBTA in September, 1991.

The operating policies and assumed transit ridership have not changed since the conformity determination prepared for the November, 1993 Transportation Plan and 1993-1995 TIP. The fare structure and levels have not changed since the fare increase in

June of 1991. At that time, fares for buses and subways were raised. A draft Environmental Impact Report was prepared documenting the impacts of the 1991 increase.

*Emission Inventory Assumptions*

This TIP will be determining conformity with the Massachusetts State Implementation Plan (SIP) submitted in November of 1993 and December of 1994. A VOC mobile source emission budget for 1996 for the Massachusetts Eastern Nonattainment Area has been set at 121 tons per summer day. The 1999 mobile source budget for VOCs is 106 tons per summer day and the 1999 mobile source budget for NOx is 215 tons per summer day. CO emissions budgets have been set for the nine cities in the Boston area CO nonattainment area. They are 280 tons per winter day for 1995, 148 tons per winter day for 2000, 126 tons per winter day for 2005, and 122 tons per winter day for 2010. The 1990 emission inventory for VOCs, NOx and CO presented in the SIP will also be used. The Boston MPO emissions will be combined with the following MPOs to show conformity with the SIP:

- Cape Cod Commission
- Central Massachusetts Regional Planning Commission
- Merrimack Valley Planning Commission
- Montachusett Regional Planning Commission
- Northern Middlesex Council of Governments
- Old Colony Planning Council
- Southeastern Regional Planning and Economical Development District
- Martha's Vineyard Commission
- Nantucket Planning and Economical Development Commission

The Executive Office of Transportation and Construction (EOTC) compiled the results from all the MPO's in the Eastern ozone nonattainment Area. The air quality analysis has been finalized for all of the MPOs and the EOTC has made the final conformity determination for the ozone nonattainment area.

### 10.2.3 Latest Emission Model

Emission factors used for calculating emission changes were determined using MOBILE 5A, the most recent working model available. Emission factors for motor vehicles are specific to each model year, pollutant type, temperature and travel speed. MOBILE 5A requires a wide range of input parameters including inspection and maintenance program information and other data such as anti-tampering rates, hot/cold start mix, emission failure rates, vehicle fleet mix, fleet age distribution, etc.

The input variables used in this conformity determination were received from the Massachusetts Department of Environmental Protection (DEP). The inputs used for the

1990 base case existing network were the same as those used in determining the 1990 Emissions Inventory for the Commonwealth of Massachusetts. The inputs used for the years 1995 through 2020 were also received from DEP and include information on programs that have been submitted to EPA as the control strategy for the Commonwealth to obtain ambient air quality standards for 1999.

The input variables used in the model runs for analysis of this TIP are shown in Appendix A. These inputs were determined through the consultation procedures as required by the conformity regulations. The model output provides an estimate of emissions in grams per mile for varying speeds and at varying temperatures for a variety of vehicle types. The emission factors used in this analysis are provided in Appendix A.

### 10.2.4 Timely Implementation of Transportation Control Measures

Transportation control measures (TCMs) have been required in the SIP in revisions submitted to EPA in 1979, 1982 and those submitted as mitigation for the construction of the Central Artery project. Those TCMs included in the 1979 and 1982 submission have all been accomplished through construction or through implementation of ongoing programs. The only exceptions are the bus immersion heater program, the Newton Rider bus service and the private bus insurance discount concept which have been abandoned. A list of these TCMs is provided in Appendix A. These projects have all been included in past Boston MPO Transportation Plans and TIPs.

TCMs that were submitted as a SIP commitment as part of the Central Artery mitigation are also included in Appendix A. All of the projects have been included in the Region's Transportation Plan as recommended projects or projects requiring further study. The TIP includes those projects that are required to be implemented in the period from 1995 to 1997. The SIP TCM projects included in the 1995 to 1997 TIP are as follows:

- Old Colony Commuter Rail Extension
- South Boston Piers Transitway
- New Park and Ride and Commuter Rail Station Parking Spaces
- Southeast Expressway High Occupancy Vehicle Lane

Federal funding in this TIP for the Southeast Expressway High Occupancy Vehicle Lane in 1996 has been delayed, however, the state transportation agencies have committed to this project and will ensure its completion and implementation with state funding if required. Construction of this project has already begun using non-federal funds. The federal funds were to be used in operating the facility. Other funding will be obtained for its operation. Other SIP TCM projects that are scheduled for completion during this period include Framingham Commuter Rail Extension to Worcester and Ipswich Commuter Rail Extension to Newburyport. These projects are being constructed with

state funds and are included for conformity analysis though funding is not through the TIP.

DEP has submitted their strategy of programs to show Reasonable Further Progress of a 15% reduction of VOCs in 1996 and the further 9% reduction of NOx toward attainment of the National Ambient Air Quality Standards (NAAQS) for ozone in 1999 to EPA. Within that strategy, there are no specific TCM projects. They do call for traffic flow improvements to reduce congestion and, therefore, improve air quality. The TIP has proposed projects for this purpose. Other transportation-related projects that have been included in the SIP control strategy are listed below:

- Enhanced Inspection and Maintenance Program
- California Low Emission Vehicle Program
- Reformulated Gasoline for On and Off-Road Vehicles
- Stage II Vapor Recovery at Gasoline Refueling Stations
- Tier I Federal Vehicle Standards

TCMs that are included in the TIP that are not SIP commitments are listed below:

- Regional Transportation Demand Management Program
- Boston Region Transportation Management Associations New Initiatives and New Formation
- Minuteman Bike Path from Alewife Station in Cambridge to the Charles River bike paths and from Bedford Center to Concord
- Bike Facilities in Acton and Malden from Malden to Revere
- Pedestrian Facilities in Malden and Cambridge

### 10.2.5 Consultation Procedures

The final conformity regulations require that the MPO must make a conformity determination according to consultation procedures set out in the final federal regulation and state (DEP) conformity regulation and it must also follow public involvement procedures established by the MPO under federal metropolitan transportation planning regulations.

The consultation requirements of both the state and federal regulations require that the Boston MPO, EOTC/Bureau of Transportation Planning and Development (BTP&D), MA. DEP, EPA - Region 1 and FHWA - Region 1 consult on the following issues:

- Selection of regional emissions analysis models including model development and assessing project design factors for modeling.

- Selection of inputs to the most recent EPA-approved emissions factor model.

- Selection of CO hotspot modeling procedures, as necessary.

- Identification of regionally significant projects to be included in the regional emissions analysis.
- Identification of projects which have changed in design and scope.
- Identification of exempt projects.
- Identification of exempt projects that should be treated as non-exempt because of adverse air quality impacts.
- Identification of the latest planning assumptions and determination of consistency with SIP assumptions.

These issues have all been addressed through consultation of the agencies listed above.

### 10.2.6 Public Participation Procedures

Title 23 CFR Section 450.324 and 310 CMR 60.03(6)h requires that the development of the TIP and related certification documents provide an adequate opportunity for public review and comment.

Section 450.316(b) establishes the outline for MPO public participation programs. The Boston MPO's public participation program was formally adopted in July 1994. The development and adoption of this program conforms to the requirements of the section. It guarantees public access to the TIP and all supporting documentation, provides for public notification of the availability of the TIP and the public's right to review the document and comment thereon, and provides a 35-day public review and comment period prior to the adoption of the TIP and related certification documents by the MPO.

As a result of the need to prepare a major TIP amendment to financially constrain fiscal year 1996 of the TIP and to financially constrain the 1993 Transportation Plan, the Boston MPO prepared an amendment to the 1995-1997 TIP. On May 26, 1995, a public notice was advertised in the Boston Globe informing the public of its right to comment on the document. On June 26, 1995, the Sub-Signatory Committee of the Boston MPO recommended that the MPO endorse the TIP and conformity determination as amended. Consequently, on June 29, 1995, the Boston MPO voted to approve the TIP and conformity determination as revised. This allowed ample opportunity for public comment and MPO review of the draft document. These procedures comply with the associated federal requirements.

### 10.2.7 Financially Constrained Document

Title 23 CFR Section 450.324 and 310 CMR 60.03(9) requires the TIP to be "financially constrained by year and include a financial plan that demonstrates which projects can be implemented using current revenue sources and which projects are to be implemented using proposed revenue sources (while the existing transportation system is being adequately operated and maintained)."

The overall TIP, and each fiscal year contained herein, is financially constrained to the annual federal apportionment and projections of state resources reasonably expected to be available during the appropriate time-frame. Projections of federal resources are based upon the estimated apportionment of the federal authorizations contained in ISTEA, as allocated to the region by the state or as allocated among the various MPOs according to federal formulae or MPO agreement. Projections of state resources are based upon the allocations contained in the current Transportation Bond Bill, which was adopted on December 20, 1994. Currently existing or accruing state and local revenues are estimated to be sufficient to operate and maintain the current transportation system. Therefore, the 1995-1997 TIP substantially complies with federal requirements relating to financial constraints.

## 10.3 PROCEDURES FOR DETERMINING REGIONAL TRANSPORTATION EMISSIONS

The federal conformity regulations set forth specific requirements for determining transportation emissions. A summary of these requirements and the procedures used in this TIP are summarized below.

### 10.3.1 Demographic, Employment and Transportation Demand

Specific sources of population, employment and traffic information used in the Transportation Plan have been listed above in Section 10.2.2. Chapter 6 of the presently conforming Transportation Plan adopted on November 15, 1993 presents conditions and characteristics of the existing regional transportation system. It presents travel characteristics of the 1993 network. There have been no regionally significant projects added between 1990 and 1993, therefore, this existing 1993 network is the same as the 1990 existing conditions from which the future scenarios will be compared.

The 1995-1997 TIP includes projects that are approved for implementation over the specific three year time-period and identifies a funding category for each project. In addition, Chapter 7 of the Transportation Plan, discusses trends and changing demands that various components of the transportation system will serve in the future years. It discusses the future roles of the highways, transit, pedestrian and bicycle travel and water travel. It also describes the development and evaluation of alternative scenarios that were analyzed to help determine the final recommendations of the Transportation Plan. Volume 2 of the Transportation Plan presents separate resource papers. One

describes the Commuting Patterns of the Greater Boston area incorporating 1990 U.S. Census Journey-to Work information. A second paper, The Transportation and Land Use Models, is a description of the computer-based models used to analyze future travel conditions.

Chapter 8 of the Transportation Plan outlines the specific project recommendations that are set forth in the Transportation Plan for the Boston MPO Region through the year 2020. Projects are divided into six categories reflecting time periods for implementation. The categories are as follows:

- Ongoing - Maintenance
- Current - Projects in the TIP or MBTA Capital Budget
- Level 1 - Awaiting Implementation (ready for TIP funding)
- Level 2 - Short-term Projects (1996 to 2000)
- Level 3 - Long-term Projects (2001 to 2020)
- Level 4 - Future Projects

Recommended projects described in these categories have been included in the Action networks for the analyses performed for the conformity determination of this TIP. Some of the projects recommended for implementation in Chapter 8 may not appear in the listing below. These projects have not been sufficiently defined in concept and scope for inclusion in the financially constrained plan and can, therefore, not be included in the conformity analysis. Examples of the projects are the North Station/South Station Rail Link and Inner Circumferential Rail. These projects proposals will be refined through the Major Investment Studies (MIS) process.

Only regionally significant projects are required to be included in the regional modeling efforts. The final federal conformity regulations define regionally significant as follows:

> ***Regionally significant:*** a transportation project (other than an exempt project) that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sport complexes, etc., or transportation terminals as well as most terminals themselves) and would be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel. A listing of projects exempt from any air quality analysis is included in Appendix A.

In addition specific projects have been exempt from regional modeling emissions analysis. The categories of projects include:

- Intersection channelization projects
- Intersection signalization projects at individual intersections
- Interchange reconfiguration projects
- Changes in vertical and horizontal alignment
- Truck size and weight inspection stations
- Bus terminals and transfer points

A listing of all projects included in the 1995-1997 TIP, along with their air quality status (exempt, modeled, or off-model) is included in Appendix A.

The Baseline and Action Networks are composed of projects proposed in the 1995 - 1997 TIP and the 1993 approved Transportation Plan. Projects in the Baseline networks consist of the 1990 network plus all projects in the TIP and Transportation Plan where one of the following steps has occurred within the last three years:

- NEPA process completion,
- Start of final design,
- Acquisition of a significant portion of right-of-way, or
- Approval of plans, specifications, and estimates.

A listing of the projects that meet these criteria and are included as part of the 1995 Baseline network is shown below:

- Existing 1990 Network
- Southbound HOV facility north of Boston on I-93 from the existing carpool lanes to Mystic Avenue
- Extension of commuter rail to Worcester
- Inner Circumferential Transit - Bus

The 1995 Action Network consists of all of the projects included in the 1995 Baseline plus regionally significant projects proposed for construction in 1995 from the 1995 - 1997 TIP. Those projects include:

- Blue Hill Avenue signal coordination in Boston
- Route 139 widening in Marshfield

The 1996 Baseline Network consists of projects included in the 1995 Baseline network and projects that meet the criteria outlined above. These projects include:

- Third Harbor Tunnel
- Beverly-Salem Bridge
- High Occupancy Vehicle (HOV) facility on the Southeast Expressway
- Old Colony Commuter Rail Restoration (two lines)

The 1996 Action Network consists of all of the projects included in the 1995 Action network and the 1996 Baseline plus regionally significant projects proposed for

construction in 1996 from the 1995 - 1997 TIP and projects in the MBTA capital budget. Those projects include:

- Route 20 widening in Marlborough (Phase I)*
- Lafayette Square signal coordination in Cambridge
- Brighton Avenue signal coordination in Boston
- Route 53 widening in Hanover*
- 20,000 new parking spaces
- Commuter Rail to Newburyport

The 1999 Baseline Network includes all projects in the 1996 Baseline plus the following projects:

- Haul Road/Massachusetts Avenue/Southeast Expressway Intersection (portion of Central Artery Construction)
- South Boston Piers project from South Station to the World Trade Center

The 1999 Action Network includes all projects in the 1996 Action Network and 1999 Baseline Network plus all projects identified in the June 1995 Refinement of the Financial Element of the 1993 Transportation Plan to be constructed by 1999. All 1997 TIP projects are also included in this scenario. Those projects include the following:

- Interstate 495 Interchange, Marlborough
- Crosby Drive and Middlesex Turnpike widening in Bedford and Billerica
- Route 20 widening in Marlborough (Phase II)
- Route 140 widening in Franklin*
- Route 3 North Capacity Enhancement
- Old Colony Greenbush Line
- Faster Commuter Rail Service to Rockport, Haverhill, Lowell, Franklin, Attleboro/Stoughton
- Washington Street Replacement Service
- Massachusetts Turnpike Transportation Demand Management
- I-93 Industriplex, Woburn
- Extension of Commuter Rail to Worcester, Phase II Service

The Baseline networks for the years 2010 and 2020 are the same as the 1999 Baseline Network plus the completed Central Artery. The 2010 Action network included those projects in the 1999 Action network and 2010 Baseline network plus the projects identified in the June 1995 Refinement of the Financial Element of the 1993 Transportation Plan to be constructed by 2010. Those projects include the following:

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* These projects are not regionally significant projects, therefore they were not included in the Transportation Plan. However, they are non-exempt and must therefore be included in the TIP conformity analysis.

- Route 3 South Capacity Enhancement
- Routes 1/114 Corridor Improvements
- Route 128 Capacity Enhancement
- South Boston Piers from South Station to Boylston
- Washington Street Replacement with Boylston Station connection to South Boston Piers

The 2020 Action network includes the 2010 Action network and 2020 Baseline network plus the projects identified in the June 1995 Refinement of the Financial Element of the 1993 Transportation Plan to be constructed by 2020. Those projects include the following:

- Red/Blue Line Connector
- Green Line Extension to Ball Square/Tufts
- Commuter Rail to Foxboro
- Commuter Rail to Milford
- Blue Line to Lynn

In addition to emissions calculated from the network model, a separate analysis was performed off-model to determine emissions from commuter rail, the MBTA bus replacement program, park and ride travel, and projects from the Congestion Mitigation and Air Quality category. This information was calculated and included in the total emissions as shown in Appendix A in Table A-6.

### 10.3.2 Changes in Project Design Since the Previous TIP Analysis

The State conformity regulations require that any changes in project design from the previous TIP be identified. The changes which have occurred since the conformity determination prepared for the revised 1995-1997 TIP are as follows:

- The timing of completion of the Central Artery/Third Harbor Tunnel. In the previous Plan analyses, the Third Harbor Tunnel was modeled for completion in 1996 and the Central Artery was modeled for completion in 1999. The completion year for the Third Harbor Tunnel has stayed as 1996, however, because of additional community input into the redesign of the Charles River Crossing portion of the Central Artery, the completion date of the Artery has been extended to 2004. Therefore, the portion of the Central Artery to be completed in 1999 includes Haul Road/Massachusetts Avenue/Southeast Expressway Intersection. Analysis years 2010 and 2020 include the completed project.

- A 1995 Baseline and Action network have been included to show compliance with the attainment date for CO. In addition, new CO emission budgets have been established for the years 1995 through 2010. This conformity determination has shown compliance with those budgets. Action vs.

Baseline information for CO also has been included on a CO nonattainment area level.

- Recently, a refinement of the financial element of the Transportation Plan was performed. Although some projects are included in Chapter 8 of the 1993 Transportation Plan as projects recommended for implementation, some of these projects have not been included in the conformity redetermination. Examples of these projects include the North-South Station Rail Link, Inner Circumferential Rail Transit Project, and Arborway Restoration. These projects have not been sufficiently defined in design concept or scope for inclusion in the financially constrained plan and can therefore not be included in this conformity analysis. These projects proposals will be refined through the Major Investment Studies(MIS) process. The Arborway Restoration was included as a SIP commitment for the Central Artery. However, as outlined in the quarterly reports from the Central Artery Environmental Oversight Committee, analysis of the Arborway project by the MBTA for the Program for Mass Transportation showed inconclusive results with further study being required.

### 10.3.3 Model Specific Information

Section 310 CMR 60.03(26) of the Massachusetts regulations, outlines requirements to be used in the network-based transportation demand models. These requirements include modeling methods and functional relationships to be used in accordance with acceptable professional practice and reasonable for purposes of emission estimation. The Boston MPO has used the methods described in the conformity regulations in the analysis of this TIP.

### 10.3.4 Highway Performance Monitoring System Adjustments

The 1990 Emission Inventory of the State Implementation Plan used the 1990 Highway Performance Monitoring System (HPMS) estimates developed by the Massachusetts Highway Department (MHD) to determine mobile source emissions submitted to EPA in November of 1993. In addition, MHD has provided updated HPMS information for 1993, as well as updated projections through 2010. This information was used by DEP to revise the 1996 VOC emission budget and calculate the 1999 VOC and NOx budgets. These budgets were submitted to EPA in December of 1994. The HPMS information was provided by functional class of roadway in daily vehicles miles traveled (DVMT). This information was seasonally adjusted using factors developed by MHD to reflect summer and winter traffic conditions. The DVMT was adjusted by a factor of 1.0188 to reflect summer conditions for calculations of emissions of VOC and NOx. VOC and NOx are precursors of ozone which is a pollutant of concern during the summer months. The DVMT was adjusted by a factor of 0.9812 to reflect winter conditions for

calculations of CO. CO emissions from mobile sources are higher during the colder winter months.

In order to remain consistent with methods used in developing the SIP, the results of the model runs used to calculate emissions for the conformity determination of the TIP were adjusted to allow for comparison. The first adjustment was for seasonal conditions. The VMT model results for each analysis year and scenario were multiplied by the 1.0188 factor to provide VMT for summer conditions and by 0.9812 to provide VMT for winter conditions. The adjusted VMT related to each model run is shown in the Appendix in Table A-6.

A second adjustment was then performed to make a comparison of model generated emission data to the HPMS generated emission data. This was done by comparing the 1990 emissions resulting from the base year model run to the HPMS emissions submitted as part of the SIP. The HPMS ozone emissions submitted as part of the SIP was divided by eastern and western nonattainment area. DEP has further split this data up by MPO region for conformity purposes. This emission target for the Boston MPO area was compared to the 1990 model data. In addition, an adjustment factor was calculated for the nine cities in the Boston area CO nonattainment area so that CO emissions could be compared to the emissions budget set forth in the SIP revision The HPMS data was divided by the model data to determine the adjustment factor to be applied to all modeled scenarios for future years. This calculation is as follows:

$$\frac{\text{1990 HPMS Emissions}}{\text{1990 Modeled Emissions}} = \text{Adjustment Factor}$$

$$\frac{119.889 \text{ tons/day}}{164.410 \text{ tons/day}} = 0.7292 \text{ VOC Adjustment Factor} \qquad \frac{155.711 \text{ tons/day}}{162.570 \text{ tons/day}} = 0.9578 \text{ NOx Adjustment Factor}$$

$$\frac{343.41 \text{ tons/day}}{457.52 \text{ tons/day}} = 0.688 \text{ CO Adjustment Factor}$$

## 10.4 THE CONFORMITY TEST

### 10.4.1 Contribute to reductions in Ozone and CO Nonattainment Areas

The Boston MPO has conducted an air quality analysis of the 1995-1997 Transportation Improvement Program (TIP). The purpose of the analysis is to evaluate the TIP's air quality impacts on the State Implementation Plan (SIP). The analysis evaluates the change in ozone precursor (VOCs and NOx) emissions and carbon monoxide emissions due to implementation of the TIP. The modeling procedures and assumptions used in this air quality analysis follow the EPA's final conformity regulations issued on November 24, 1993 and the State Conformity Regulations effective December, 1994. They are also consistent with procedures used by the Massachusetts Department of

Environmental Protection to develop Massachusetts' 1990 Base Year Emission Inventory, 1996 Reasonable Further Progress Plan, and the Post-1996 Reasonable Further Progress Plan for the SIP. All consultation procedures were followed to ensure that a complete analysis of the TIP was performed with consistency with the SIP.

One of the criteria for conformity to a SIP in the transitional period is to show that there is a reduction in emissions in the action (build) scenario over the baseline (no build) scenario. As discussed earlier, the Eastern ozone nonattainment area consists of ten metropolitan planning areas. The Executive Office of Transportation and Construction has compiled the results for VOC and NOx from these MPOs and are shown in Tables 10-1 and 10-2. The results of the air quality analysis from the Eastern ozone nonattainment area demonstrate that the Action scenarios will result in a reduction of VOC and NOx emissions when compared to the Baseline scenarios. Table A-6 in the Appendix shows the Boston MPO area only information for Baseline/Action emissions for all analysis years.

The Boston MPO must also report CO emissions in the CO nonattainment area of the ten cities and towns within the region. Table 10-3 reports the Baseline versus Action CO emissions from the nine cities and towns in the Boston area CO nonattainment area, while Table 10-4 shows the CO emissions in Waltham. The total CO emissions include emissions calculated by the model as well as off-model calculations from the Transportation Demand Management (TDM) program and the MBTA bus replacement program within the ten CO nonattainment communities.

In addition, all scenarios must contribute to a reduction in emissions from 1990 baseline emissions. As shown in Tables 10-1, 10-2, 10-3, and 10-4, the Eastern nonattainment area VOC and NOx emissions for all years, 1996 through 2020, meet this criterion, as well as the CO emissions for the CO nonattainment area within the Boston MPO region, and, therefore, contribute to reductions in VOCs, NOx, and CO in the nonattainment area. Table A-6 shows that the Boston MPO area TIP contributes to reductions from 1990 emissions of VOCs and NOx in the region. Tables 10-3 and 10-4 show that the Boston MPO area TIP contributes to reductions from 1990 emissions of CO in the CO nonattainment areas in the Boston MPO.

**TABLE 10-1**
**VOC Emissions Estimates for the Eastern Massachusetts Ozone Nonattainment Area**
**(all emissions in tons per summer day)**

| Year | Baseline Emissions | Action Emissions | Difference (Action - Baseline) | Budget | Difference (Action -Budget) |
|---|---|---|---|---|---|
| 1990 | 249.833 | n/a | n/a | n/a | n/a |
| 1996 | 117.166 | 116.443 | -0.723 | 120.763 | -4.320 |
| 1999 | 102.531 | 102.352 | -0.179 | 105.691 | -3.339 |
| 2010 | 63.287 | 63.092 | -0.195 | 105.691 | -42.599 |
| 2020 | 67.072 | 66.869 | -0.203 | 105.691 | -38.822 |

**TABLE 10-2**
**NOx Emissions Estimates for the Eastern Massachusetts Ozone Nonattainment Area**
**(all emissions in tons per summer day)**

| Year | Baseline Emissions | Action Emissions | Difference (Action - Baseline) | Budget | Difference (Action - Budget) |
|---|---|---|---|---|---|
| 1990 | 324.626 | n/a | n/a | n/a | n/a |
| 1996 | 237.901 | 236.767 | -1.134 | n/a | n/a |
| 1999 | 215.241 | 214.747 | -0.494 | 215.298 | -0.551 |
| 2010 | 170.427 | 170.194 | -0.233 | 215.298 | -45.104 |
| 2020 | 181.105 | 180.912 | -0.193 | 215.298 | -34.386 |

TABLE 10-3
Winter Carbon Monoxide Emissions Estimates from the CO Nonattainment Area for the Nine Cities in the Boston Area Nonattainment Area
(Tons/Winter Day)

| Year | Baseline Emissions | Action Emissions | Difference (Action - Baseline) | Budget | Difference (Action - Budget) |
|---|---|---|---|---|---|
| 1990 | 343.41 | n/a | n/a | n/a | n/a |
| 1995 | 206.19 | 206.17 | -0.02 | 280.1 | -73.93 |
| 1996 | 176.52 | 176.47 | -0.05 | 280.1 | -103.63 |
| 1999 | 146.74 | 146.67 | -0.07 | 280.1 | -133.43 |
| 2000 | 142.94 | 142.87 | -0.07 | 147.56 | -4.69 |
| 2005 | 123.91 | 123.85 | -0.06 | 125.93 | -2.08 |
| 2010 | 104.89 | 104.83 | -0.06 | 121.75 | -16.92 |
| 2020 | 111.84 | 111.79 | -0.05 | 121.75 | -9.96 |

TABLE 10-4
Winter Carbon Monoxide Emissions Estimates from the CO Nonattainment Area Only for the City of Waltham
(Tons/Winter Day)

| Year | Baseline Emissions | Action Emissions | Difference (Action - Baseline) |
|---|---|---|---|
| 1990 | 36.99 | n/a | n/a |
| 1995 | 21.63 | 21.55 | -0.08 |
| 1996 | 18.51 | 18.45 | -0.06 |
| 1999 | 14.42 | 14.37 | -0.05 |
| 2000 | 14.05 | 14.00 | -0.05 |
| 2005 | 12.19 | 12.17 | -0.03 |
| 2010 | 10.34 | 10.33 | -0.01 |
| 2020 | 11.09 | 11.08 | -0.01 |

### 10.4.2 Consistent with emission budgets set forth in SIP

The final test to show conformity is to show that the 1995-1997 TIP is consistent with the emission budgets set forth in the SIP. The Massachusetts Reasonable Further Progress Plan (RFP) has been deemed complete by the EPA in a letter dated January 13, 1995. EPA has made a determination that the 15% RFP SIP submittal contains an adequate mobile source emissions budget to conduct conformity determinations using the "transitional period" conformity criteria.

The 1996 VOC budget for Eastern Massachusetts is 121 tons per summer day. The 1999 NOx budget is 215 tons per summer day and the 1999 VOC budget is 106 tons per summer day. CO budgets for the nine cities in the Boston area CO nonattainment area are 280 tons per winter day for 1995, 148 tons per winter day for 2000, 126 tons per winter day in 2005, and 122 tons per winter day for 2010.

The total tons per day of VOCs and NOx for the Eastern Massachusetts nonattainment area from all of the analyzed scenarios are shown in Tables 10-1 and 10-2. The total tons per winter day of CO emissions for the nine cities in the Boston area nonattainment area are shown in Table 10-3. The results of the air quality analysis demonstrates that the VOC, NOx, and CO emissions from all Action scenarios are less than the Massachusetts VOC, NOx, and CO emission budgets.

## 10.5 CONCLUSION

The Clean Air Act Amendments of 1990 established new requirements for transportation plans, programs, and projects. EPA published a final rule in the November 24, 1993 Federal Register on procedures to be followed by the United States Department of Transportation in determining conformity of transportation plans, programs, and projects with the SIP. The Commonwealth of Massachusetts also published their final rule on conformity effective December 30, 1994.

The Boston MPO has conducted an air quality analysis of the 1995-1997 TIP. The purpose of the analysis is to evaluate the TIP's air quality impacts on the SIP. The analysis evaluates the change in ozone precursor emissions (VOCs, and NOx) and CO emissions due to the implementation of the TIP. The modeling procedures and assumptions used in this air quality analysis follow EPA's and the Commonwealth's guidance and are consistent with the procedures used by the Massachusetts DEP to develop Massachusetts' 1990 Base Year Emissions Inventory, 1996 Reasonable Further Progress Plan, and the Post-1996 Reasonable Further Progress Plan for the SIP.

Eastern Massachusetts has been designated as a Serious ozone nonattainment area. Ten cities and towns have been designated as nonattainment for CO. The EPA conformity regulations require that transportation plans, programs, and projects evaluate their impact on nonattainment areas. Eastern Massachusetts is made up of ten regional

planning agencies (RPAs), therefore VOC and NOx emissions must be combined in order to compare the results to the conformity criteria.

The Massachusetts RFP was deemed complete by the EPA in a letter dated January 13, 1995. EPA made the determination that the 15 percent RFP SIP submittal contained an adequate mobile source emission budget to conduct conformity determinations using the "transitional period" conformity criteria.

Accordingly, the EOTC has found the emission levels from the Boston MPO 1995-1997 TIP in combination with the emission levels from the other RPAs in Eastern Massachusetts to be in conformance with the SIP according to transitional period conformity criteria. Specifically, the following conditions are met:

- In the transitional period, VOC and NOx emissions for the Eastern ozone nonattainment area for the Action (Build) scenario are less than the Baseline (No Build) scenario for all analysis years.

- CO emissions for the ten cities and towns in the CO nonattainment area only for the Boston MPO area for the Action (Build) scenario are less than the Baseline (No Build) scenario for all analysis years.

- The VOC emissions for the Action (build) scenarios are less than the 1996 and 1999 VOC mobile source emission budgets for analysis years 1996 through 2020.

- The NOx emissions for the Action (build) scenario are less than the 1999 NOx mobile source emission budget for analysis years 1999 through 2020.

- The CO emissions for the Action (build) scenarios are less than the 1995, 2000, 2005, and 2010 CO mobile source emission budgets for analysis years 1995, 1996, 1999, 2000, 2005, 2010, and 2020 for the nine cities in the Boston area nonattainment area.

- The Action (Build) scenarios contribute to a reduction from the 1990 emissions inventory for VOC, NOx, and CO emissions for all analysis years.

In accordance with Section 176(c)(4) of the Clean Air Act as amended in 1990, the MPO for the Boston Region has completed its review and hereby certifies that the 1995-1997 TIP conditionally conforms with 40 CFR Parts 51 and 93 issued on November 24, 1993 and 310 CMR 60.03 issued on December 30, 1994.

# APPENDIX A
# SUPPLEMENTAL INFORMATION FOR AIR QUALITY CONFORMITY DETERMINATION

# TABLE A.1

## Mobile 5A Inputs - 1995 Summer Conditions

| | VOCs | CO | NOx |
|---|---|---|---|
| Tampering rates | Mobile 5A defaults | Mobile 5A defaults | Mobile 5A defaults |
| VMT mix - Composite of all roadway types (see footnotes for breakdown by roadway type) | VMFLAG 3, MA specific<br>LDGV - 82.3% LDGT1 - 7.1%<br>LDGT2 - 3.6% HDGV - 1.9%<br>LDDV - 1.1% LDDT - 0.1%<br>HDDV - 3.2% MC - 0.7% | VMFLAG 3, MA specific<br>LDGV - 82.3% LDGT1 - 7.1%<br>LDGT2 - 3.6% HDGV - 1.9%<br>LDDV - 1.1% LDDT - 0.1%<br>HDDV - 3.2% MC - 0.7% | VMFLAG 3, MA specific<br>LDGV - 82.3% LDGT1 - 7.1%<br>LDGT2 - 3.6% HDGV - 1.9%<br>LDDV - 1.1% LDDT - 0.1%<br>HDDV - 3.2% MC - 0.7% |
| Annual Mileage Accumulation and/or Registration Distribution by Age | Default accumulation rates/Massachusetts specific registration distribution | Default accumulation rates/Massachusetts specific registration distribution | Default accumulation rates/Massachusetts specific registration distribution |
| Modified Basic Exhaust Emission Rates (BERs) | Mobile 5A defaults | Mobile 5A defaults | Mobile 5A defaults |
| Inspection and Maintenance | IMFLAG 2, program modeled (single program) | IMFLAG 2, program modeled (single program) | IMFLAG 2, program modeled (single program) |
| program start year | 1983 | 1983 | 1983 |
| stringency level | 12% | 12% | 12% |
| first model year subject to program | 1981 | 1981 | 1981 |
| last model year subject to program | 2020 | 2020 | 2020 |
| waiver rate pre -1981 | 1% | 1% | 1% |
| waiver rate 1981 - present | 1% | 1% | 1% |
| compliance rate | 80% | 80% | 80% |
| program type | decentralized/computerized | decentralized/computerized | decentralized/computerized |
| inspection frequency | annual | annual | annual |
| vehicles subject to inspection | LDGV,LDGV1,LDGV2 | LDGV,LDGV1,LDGV2 | LDGV,LDGV1,LDGV2 |
| test type | idle | idle | idle |
| alternative credits | none | none | none |
| transient test | not modeled | not modeled | not modeled |
| purge system check | not modeled | not modeled | not modeled |
| pressure check | not modeled | not modeled | not modeled |
| Exhaust Emission Correction Factors | no corrections | no corrections | no corrections |
| Anti-Tampering Program | no ATP modeled | no ATP modeled | no ATP modeled |
| Refueling Emission Factors | flag switch "2"-program modeled | flag switch "2"-program modeled | flag switch "2" |
| stage II start year | 1991 | 1991 | 1991 |
| phase in period | 3 years | 3 years | 3 years |
| system efficiency for light-duty vehicles | 84% | 84% | 84% |
| system efficiency for heavy-duty vehicles | 75% | 75% | 75% |
| Local Area Parameter Record | flag switch "2" | flag switch "2" | flag switch "2" |
| minimum daily temp (°F) | 68° F | 68° F | 68° F |
| maximum daily temp (°F) | 94° F | 94° F | 94° F |
| period 1 Reid Vapor Pressure | 11.5 psi | 11.5 psi | 11.5 psi |
| period 2 Reid Vapor Pressure | 8.5 psi | 8.5 psi | 8.5 psi |
| period 2 start year | 1989 | 1989 | 1989 |
| oxygenated fuels flag | flag switch "1"- not modeled | flag switch "1"- not modeled | flag switch "1"- not modeled |
| diesel sales fraction | flag switch "1"- not modeled | flag switch "1"- not modeled | flag switch "1"- not modeled |
| reformulated fuel flag | flag switch "2"-modeled | flag switch "2"-modeled | flag switch "2"-modeled |
| Temperature Values | flag switch "1"- daily average | flag switch "1"- daily average | flag switch "1"- daily average |
| Composition of Hydrocarbons | flag switch "3"- VOCs | flag switch "1"- No HC calculated | flag switch "1"- No HC calculated |
| Scenario Section | | | |
| region | flag switch "4"- LEV Program | flag switch "4"- LEV Program | flag switch "4"- LEV Program |
| calendar year of evaluation | run specific | run specific | run specific |
| average speed | scenario specific | scenario specific | scenario specific |
| ambient temp (°F) | 85.4°F | 85.4°F | 85.4°F |
| operating mode fractions | 20.6/27.3/20.6 | 20.6/27.3/20.6 | 20.6/27.3/20.6 |
| month of evaluation | flag switch "7" - July | flag switch "7" - July | flag switch "7" - July |
| LEV Program phase in year | 1994 | 1994 | 1994 |
| I/M Program for LEV program | flag switch "1"- standard I/M | flag switch "1"- standard I/M | flag switch "1"- standard I/M |

TABLE A.1 (Cont.)

Mobile 5A Inputs - 1995 Winter Conditions

| | CO |
|---|---|
| Tampering rates | Mobile 5A defaults |
| VMT mix | VMFLAG 3, MA specific<br>LDGV - 82.3% LDGT1 - 7.1%<br>LDGT2 - 3.6% HDGV - 1.9%<br>LDDV - 1.1% LDDT - 0.1%<br>HDDV - 3.2% MC - 0.7% |
| Annual Mileage Accumulation and/or Registration Distribution by Age | Default accumulation rates/Massachusetts specific registration distribution |
| Modified Basic Exhaust Emission Rates (BERs) | Mobile 5A defaults |
| Inspection and Maintenance | IMFLAG 2, program modeled (single program) |
| program start year | 1983 |
| stringency level | 12% |
| first model year subject to program | 1981 |
| last model year subject to program | 2020 |
| waiver rate pre -1981 | 1% |
| waiver rate 1981 - present | 1% |
| compliance rate | 80% |
| program type | decentralized/computerized |
| inspection frequency | annual |
| vehicles subject to inspection | LDGV,LDGV1,LDGV2 |
| test type | idle |
| alternative credits | none |
| transient test | not modeled |
| purge system check | not modeled |
| pressure check | not modeled |
| Exhaust Emission Correction Factors | no corrections |
| Anti-Tampering Program | no ATP modeled |
| Refueling Emission Factors | flag switch "2"-program modeled |
| stage II start year | 1991 |
| phase in period | 3 years |
| light-duty vehicles | 84% |
| heavy-duty vehicles | 75% |
| Local Area Parameter Record | flag switch "2" |
| minimum daily temp (°F) | 35° F |
| maximum daily temp (°F) | 45° F |
| period 1 Reid Vapor Pressure | 13.5 psi |
| period 2 Reid Vapor Pressure | 13.5 psi |
| period 2 start year | 1989 |
| oxygenated fuels flag | flag switch "1"- not modeled |
| diesel sales fraction | flag switch "1"- not modeled<br>flag switch "2"-modeled (95-96) |
| Temperature Values | flag switch "1"- daily average |
| Composition of Hydrocarbons | flag switch "1"- No HC calculated |
| Scenario Section | |
| region | flag switch "4"- LEV Program |
| calendar year of evaluation | run specific |
| average speed | scenario specific |
| ambient temp (°F) | 40°F |
| operating mode fractions | 20.6/27.3/20.6 |
| month of evaluation | flag switch "1" - January |
| LEV Program phase in year | 1994 |
| I/M Program for LEV program | flag switch "1"- standard I/M |

TABLE A.1 (Continued)

Mobile 5A Inputs - Years 1996 through 2020
Summer Conditions

| | VOCs | CO | NOx |
|---|---|---|---|
| Tampering rates | Mobile 5A defaults | Mobile 5A defaults | Mobile 5A defaults |
| VMT mix | VMFLAG 3, MA specific<br>LDGV - 82.3% LDGT1 - 7.1%<br>LDGT2 - 3.6% HDGV - 1.9%<br>LDDV - 1.1% LDDT - 0.1%<br>HDDV - 3.2% MC - 0.7% | VMFLAG 3, MA specific<br>LDGV - 82.3% LDGT1 - 7.1%<br>LDGT2 - 3.6% HDGV - 1.9%<br>LDDV - 1.1% LDDT - 0.1%<br>HDDV - 3.2% MC - 0.7% | VMFLAG 3, MA specific<br>LDGV - 82.3% LDGT1 - 7.1%<br>LDGT2 - 3.6% HDGV - 1.9%<br>LDDV - 1.1% LDDT - 0.1%<br>HDDV - 3.2% MC - 0.7% |
| Annual Mileage Accumulation and/or Registration Distribution by Age | Default accumulation rates/Massachusetts specific registration distribution | Default accumulation rates/Massachusetts specific registration distribution | Default accumulation rates/Massachusetts specific registration distribution |
| Modified Basic Exhaust Emission Rates (BERs) | Mobile 5A defaults | Mobile 5A defaults | Mobile 5A defaults |
| Inspection and Maintenance | IMFLAG 3, program modeled (two programs) | IMFLAG 3, program modeled (two programs) | IMFLAG 3, program modeled (two programs) |
| 2-Speed I/M | | | |
| program start year | 1983 | 1983 | 1983 |
| stringency level | 12% | 12% | 12% |
| first model year subject to program | 1971 | 1971 | 1971 |
| last model year subject to program | 1980 | 1980 | 1980 |
| waiver rate pre -1981 | 1% | 1% | 1% |
| waiver rate 1981 - present | 1% | 1% | 1% |
| compliance rate | 80% | 80% | 80% |
| program type | inspection only | inspection only | inspection only |
| inspection frequency | biennial | biennial | biennial |
| vehicles subject to inspection | LDGV,LDGV1,LDGV2,HDGV | LDGV,LDGV1,LDGV2,HDGV | LDGV,LDGV1,LDGV2,HDGV |
| test type | idle | idle | idle |
| alternative credits | none | none | none |
| cutpoint for hydrocarbon | 220 | 220 | 220 |
| cutpoint for carbon monoxide | 1.2 | 1.2 | 1.2 |
| cutpoint for nitrogen oxides | 999 | 999 | 999 |
| Enhanced Program | | | |
| program start year | 1995 | 1995 | 1995 |
| stringency level | 12% | 12% | 12% |
| first model year subject to program | 1981 | 1981 | 1981 |
| last model year subject to program | 2020 | 2020 | 2020 |
| waiver rate pre -1981 | 1% | 1% | 1% |
| waiver rate 1981 - present | 1% | 1% | 1% |
| compliance rate | 98% | 98% | 98% |
| program type | inspection only | inspection only | inspection only |
| inspection frequency | biennial | biennial | biennial |
| vehicles subject to inspection | LDGV,LDGV1,LDGV2.HDGV | LDGV,LDGV1,LDGV2.HDGV | LDGV,LDGV1,LDGV2.HDGV |
| test type | transient test | transient test | transient test |
| alternative credits | none | none | none |
| cutpoint for hydrocarbon | 0.8 | 0.8 | 0.8 |
| cutpoint for carbon monoxide | 15 | 15 | 15 |
| cutpoint for nitrogen oxides | 2 | 2 | 2 |

## Table A.1 Mobile 5A Inputs - Years 1996 through 2020 Summer Conditions (Cont.)

| | | | |
|---|---|---|---|
| Anti-tampering program | ATPFLAG 8 - program modeled | ATPFLAG 8 - program modeled | ATPFLAG 8 - program modeled |
| program start year | 1995 | 1995 | 1995 |
| first model year subject to program | 1975 | 1975 | 1975 |
| last model year subject to program | 2020 | 2020 | 2020 |
| vehicles subject to program | LDGV,LDGV1,LDGV2,HDGV | LDGV,LDGV1,LDGV2,HDGV | LDGV,LDGV1,LDGV2,HDGV |
| program type | inspection only | inspection only | inspection only |
| inspection frequency | biennial | biennial | biennial |
| compliance rate | 98% | 98% | 98% |
| inspections performed: | | | |
| air system | tested | tested | tested |
| catalyst | tested | tested | tested |
| fuel inlet restrictor | tested | tested | tested |
| tailpipe lead deposit test | not tested | not tested | not tested |
| EGR system | tested | tested | tested |
| evaporative system | tested | tested | tested |
| PCV | tested | tested | tested |
| gas cap | tested | tested | tested |
| Pressure data | | | |
| program start year | 1995 | 1995 | 1995 |
| first model year subject to program | 1975 | 1975 | 1975 |
| last model year subject to program | 2020 | 2020 | 2020 |
| vehicles subject to inspection | LDGV,LDGV1,LDGV2,HDGV | LDGV,LDGV1,LDGV2,HDGV | LDGV,LDGV1,LDGV2,HDGV |
| program type | inspection only | inspection only | inspection only |
| inspection frequency | biennial | biennial | biennial |
| compliance rate | 98% | 98% | 98% |
| Purge data | | | |
| program start year | 1995 | 1995 | 1995 |
| first model year subject to program | 1975 | 1975 | 1975 |
| last model year subject to program | 2020 | 2020 | 2020 |
| vehicles subject to inspection | LDGV,LDGV1,LDGV2,HDGV | LDGV,LDGV1,LDGV2,HDGV | LDGV,LDGV1,LDGV2,HDGV |
| program type | inspection only | inspection only | inspection only |
| inspection frequency | biennial | biennial | biennial |
| compliance rate | 98% | 98% | 98% |
| Refueling Emission Factors | flag switch "2"-program modeled | flag switch "2"-program modeled | flag switch "2" |
| stage II start year | 1991 | 1991 | 1991 |
| phase in period | 3 years | 3 years | 3 years |
| system efficiency for light-duty vehicles | 84% | 84% | 84% |
| system efficiency for heavy-duty vehicles | 75% | 75% | 75% |
| Local Area Parameter Record | flag switch "2" | flag switch "2" | flag switch "2" |
| minimum daily temp (°F) | 68° F | 68° F | 68° F |
| maximum daily temp (°F) | 94° F | 94° F | 94° F |
| period 1 Reid Vapor Pressure | 11.5 psi | 11.5 psi | 11.5 psi |
| period 2 Reid Vapor Pressure | 8.5 psi | 8.5 psi | 8.5 psi |
| period 2 start year | 1989 | 1989 | 1989 |
| oxygenated fuels flag | flag switch "1"- not modeled | flag switch "1"- not modeled | flag switch "1"- not modeled |
| diesel sales fraction | flag switch "1"- not modeled | flag switch "1"- not modeled | flag switch "1"- not modeled |
| reformulated fuel flag | flag switch "2"-modeled | flag switch "2"-modeled | flag switch "2"-modeled |
| Temperature Values | flag switch "1"- daily average | flag switch "1"- daily average | flag switch "1"- daily average |
| Composition of Hydrocarbons | flag switch "3" - VOCs | flag switch "1"- No HC calculated | flag switch "1"- No HC calculated |
| Scenario Section | | | |
| region | flag switch "4"- CA LEV Program | flag switch "4"- CA LEV Program | flag switch "4"- CA LEV Program |
| calendar year of evaluation | run specific | run specific | run specific |
| average speed | scenario specific | scenario specific | scenario specific |
| ambient temp (°F) | 85.4°F | 85.4°F | 85.4°F |
| operating mode fractions | 20.6/27.3/20.6 | 20.6/27.3/20.6 | 20.6/27.3/20.6 |
| month of evaluation | flag switch "7"-July | flag switch "7"-July | flag switch "7"-July |
| LEV Program phase-in year | 1994 | 1994 | 1994 |
| I/M Program for LEV Program | flag switch "1"-standard I/M | flag switch "1"-standard I/M | flag switch "1"-standard I/M |

## Table A.1 Mobile 5A Inputs - Years 1996 through 2020 Winter Conditions

| | CO |
|---|---|
| | |
| Tampering rates | Mobile 5A defaults |
| VMT mix | VMFLAG 3, MA specific<br>LDGV - 82.3% LDGT1 - 7.1%<br>LDGT2 - 3.6% HDGV - 1.9%<br>LDDV - 1.1% LDDT - 0.1%<br>HDDV - 3.2% MC - 0.7% |
| Annual Mileage Accumulation and/or Registration Distribution by Age | Default accumulation rates/Massachusetts specific registration distribution |
| Modified Basic Exhaust Emission Rates (BERs) | Mobile 5A defaults |
| Inspection and Maintenance | IMFLAG 3, program modeled (two programs) |
| 2-Speed I/M | |
| program start year | 1983 |
| stringency level | 12% |
| first model year subject to program | 1971 |
| last model year subject to program | 1980 |
| waiver rate pre -1981 | 1% |
| waiver rate 1981 - present | 1% |
| compliance rate | 80% |
| program type | inspection only |
| inspection frequency | biennial |
| vehicles subject to inspection | LDGV,LDGV1,LDGV2,HDGV |
| test type | idle |
| alternative credits | none |
| cutpoint for hydrocarbon | 220 |
| cutpoint for carbon monoxide | 1.2 |
| cutpoint for nitrogen oxides | 999 |
| Enhanced Program | |
| program start year | 1995 |
| stringency level | 12% |
| first model year subject to program | 1981 |
| last model year subject to program | 2020 |
| waiver rate pre -1981 | 1% |
| waiver rate 1981 - present | 1% |
| compliance rate | 98% |
| program type | inspection only |
| inspection frequency | biennial |
| vehicles subject to inspection | LDGV,LDGV1,LDGV2.HDGV |
| test type | transient test |
| alternative credits | none |
| cutpoint for hydrocarbon | 0.8 |
| cutpoint for carbon monoxide | 15 |
| cutpoint for nitrogen oxides | 2 |

## Table A.1 Mobile 5A Inputs - Years 1996 through 2020 Winter Conditions (Cont.)

| | |
|---|---|
| Anti-tampering program | ATPFLAG 8 - program modeled |
| program start year | 1995 |
| first model year subject to program | 1975 |
| last model year subject to program | 2020 |
| vehicles subject to program | LDGV,LDGV1,LDGV2,HDGV |
| program type | inspection only |
| inspection frequency | biennial |
| compliance rate | 98% |
| inspections performed: | |
| air system | tested |
| catalyst | tested |
| fuel inlet restrictor | tested |
| tailpipe lead deposit test | not tested |
| EGR system | tested |
| evaporative system | tested |
| PCV | tested |
| gas cap | tested |
| Pressure data | |
| program start year | 1995 |
| first model year subject to program | 1975 |
| last model year subject to program | 2020 |
| vehicles subject to inspection | LDGV,LDGV1,LDGV2,HDGV |
| program type | inspection only |
| inspection frequency | biennial |
| compliance rate | 98% |
| Purge data | |
| program start year | 1995 |
| first model year subject to program | 1975 |
| last model year subject to program | 2020 |
| vehicles subject to inspection | LDGV,LDGV1,LDGV2,HDGV |
| program type | inspection only |
| inspection frequency | biennial |
| compliance rate | 98% |
| Refueling Emission Factors | flag switch "2"-program modeled |
| stage II start year | 1991 |
| phase in period | 3 years |
| light-duty vehicles | 84% |
| heavy-duty vehicles | 75% |
| Local Area Parameter Record | flag switch "2" |
| minimum daily temp (°F) | 35° F |
| maximum daily temp (°F) | 45° F |
| period 1 Reid Vapor Pressure | 13.5 psi |
| period 2 Reid Vapor Pressure | 13.5 psi |
| period 2 start year | 1989 |
| oxygenated fuels flag | flag switch "1"- not modeled |
| diesel sales fraction | flag switch "1"- not modeled |
| reformulated fuel flag | flag switch "2"-modeled |
| Temperature Values | flag switch "1"- daily average |
| Composition of Hydrocarbons | flag switch "1"- No HC calculated |
| Scenario Section | |
| region | flag switch "4"- CA LEV Program |
| calendar year of evaluation | run specific |
| average speed | scenario specific |
| ambient temp (°F) | 40°F |
| operating mode fractions | 20.6/27.3/20.6 |
| month of evaluation | flag switch "1"-January |
| LEV Program phase-in year | 1994 |
| I/M Program for LEV Program | flag switch "1"-standard I/M |

## Table A.2 - Emission Factors

| Speed (mph) | VOC Emission Factors - Mobile 5A (grams/mile)* 1-13-95 | | | | | |
|---|---|---|---|---|---|---|
| | 1990 | 1995 | 1996 | 1999 | 2010 | 2020 |
| Idle (gr/hour) | 25.57 | 15.32 | 11.29 | 8.72 | 5.53 | 5.34 |
| 3 | 17.584 | 11.602 | 7.252 | 5.917 | 2.894 | 2.759 |
| 4 | 12.537 | 8.189 | 5.452 | 4.444 | 2.206 | 2.105 |
| 5 | 9.819 | 6.38 | 4.43 | 3.614 | 1.819 | 1.736 |
| 6 | 8.134 | 5.271 | 3.77 | 3.08 | 1.57 | 1.5 |
| 7 | 6.991 | 4.526 | 3.308 | 2.708 | 1.396 | 1.334 |
| 8 | 6.324 | 4.11 | 3.034 | 2.492 | 1.284 | 1.227 |
| 9 | 5.807 | 3.787 | 2.816 | 2.319 | 1.196 | 1.143 |
| 10 | 5.381 | 3.519 | 2.631 | 2.171 | 1.123 | 1.073 |
| 11 | 5.02 | 3.291 | 2.469 | 2.042 | 1.061 | 1.014 |
| 12 | 4.71 | 3.093 | 2.325 | 1.927 | 1.007 | 0.962 |
| 13 | 4.438 | 2.917 | 2.196 | 1.823 | 0.96 | 0.918 |
| 14 | 4.197 | 2.761 | 2.077 | 1.727 | 0.918 | 0.878 |
| 15 | 3.979 | 2.619 | 1.968 | 1.639 | 0.881 | 0.842 |
| 16 | 3.782 | 2.489 | 1.866 | 1.556 | 0.847 | 0.81 |
| 17 | 3.6 | 2.368 | 1.77 | 1.478 | 0.816 | 0.781 |
| 18 | 3.433 | 2.257 | 1.679 | 1.403 | 0.787 | 0.754 |
| 19 | 3.276 | 2.152 | 1.592 | 1.332 | 0.761 | 0.729 |
| 20 | 3.147 | 2.061 | 1.519 | 1.271 | 0.732 | 0.702 |
| 21 | 3.054 | 1.993 | 1.47 | 1.229 | 0.707 | 0.677 |
| 22 | 2.968 | 1.931 | 1.425 | 1.19 | 0.683 | 0.655 |
| 23 | 2.888 | 1.873 | 1.383 | 1.155 | 0.662 | 0.634 |
| 24 | 2.814 | 1.819 | 1.344 | 1.121 | 0.642 | 0.614 |
| 25 | 2.745 | 1.77 | 1.307 | 1.09 | 0.623 | 0.597 |
| 26 | 2.68 | 1.723 | 1.273 | 1.061 | 0.606 | 0.58 |
| 27 | 2.62 | 1.679 | 1.24 | 1.033 | 0.59 | 0.565 |
| 28 | 2.563 | 1.638 | 1.21 | 1.007 | 0.575 | 0.55 |
| 29 | 2.509 | 1.6 | 1.181 | 0.982 | 0.561 | 0.537 |
| 30 | 2.458 | 1.563 | 1.153 | 0.958 | 0.547 | 0.524 |
| 31 | 2.41 | 1.528 | 1.127 | 0.936 | 0.535 | 0.512 |
| 32 | 2.365 | 1.496 | 1.102 | 0.915 | 0.523 | 0.501 |
| 33 | 2.322 | 1.464 | 1.078 | 0.895 | 0.512 | 0.49 |
| 34 | 2.281 | 1.435 | 1.055 | 0.875 | 0.502 | 0.48 |
| 35 | 2.242 | 1.407 | 1.033 | 0.857 | 0.492 | 0.47 |
| 36 | 2.205 | 1.38 | 1.012 | 0.839 | 0.482 | 0.461 |
| 37 | 2.17 | 1.354 | 0.992 | 0.822 | 0.473 | 0.453 |
| 38 | 2.137 | 1.329 | 0.973 | 0.805 | 0.465 | 0.444 |
| 39 | 2.105 | 1.306 | 0.954 | 0.789 | 0.456 | 0.437 |
| 40 | 2.074 | 1.283 | 0.936 | 0.774 | 0.449 | 0.429 |
| 41 | 2.045 | 1.261 | 0.919 | 0.759 | 0.441 | 0.422 |
| 42 | 2.018 | 1.24 | 0.902 | 0.745 | 0.434 | 0.415 |
| 43 | 1.991 | 1.22 | 0.886 | 0.731 | 0.427 | 0.409 |
| 44 | 1.966 | 1.201 | 0.87 | 0.718 | 0.421 | 0.403 |
| 45 | 1.941 | 1.182 | 0.855 | 0.705 | 0.415 | 0.397 |
| 46 | 1.918 | 1.164 | 0.84 | 0.692 | 0.409 | 0.391 |
| 47 | 1.895 | 1.147 | 0.825 | 0.68 | 0.403 | 0.386 |
| 48 | 1.874 | 1.13 | 0.812 | 0.668 | 0.397 | 0.381 |
| 49 | 1.866 | 1.124 | 0.81 | 0.666 | 0.396 | 0.379 |
| 50 | 1.859 | 1.119 | 0.808 | 0.664 | 0.395 | 0.378 |
| 51 | 1.853 | 1.114 | 0.806 | 0.663 | 0.394 | 0.377 |
| 52 | 1.847 | 1.11 | 0.804 | 0.661 | 0.393 | 0.376 |
| 53 | 1.841 | 1.105 | 0.802 | 0.659 | 0.392 | 0.376 |
| 54 | 1.835 | 1.101 | 0.8 | 0.658 | 0.391 | 0.375 |
| 55 | 1.83 | 1.098 | 0.799 | 0.657 | 0.391 | 0.374 |
| 56 | 1.876 | 1.119 | 0.814 | 0.668 | 0.397 | 0.38 |
| 57 | 1.922 | 1.14 | 0.83 | 0.679 | 0.403 | 0.386 |
| 58 | 1.968 | 1.162 | 0.846 | 0.69 | 0.41 | 0.392 |
| 59 | 2.015 | 1.184 | 0.862 | 0.701 | 0.416 | 0.399 |
| 60 | 2.062 | 1.206 | 0.878 | 0.712 | 0.423 | 0.405 |
| 61 | 2.109 | 1.228 | 0.894 | 0.724 | 0.43 | 0.411 |
| 62 | 2.156 | 1.25 | 0.91 | 0.735 | 0.436 | 0.418 |
| 63 | 2.204 | 1.273 | 0.927 | 0.747 | 0.443 | 0.424 |
| 64 | 2.252 | 1.295 | 0.943 | 0.758 | 0.45 | 0.431 |
| 65 | 2.3 | 1.318 | 0.96 | 0.77 | 0.457 | 0.438 |

*Idle emission factor is in grams/hour.

## Table A.2 - Emission Factors

| Speed (mph) | NOX Emission Factors - Mobile 5A (grams/mile)* 1-13-95 | | | | | |
|---|---|---|---|---|---|---|
| | 1990 | 1995 | 1996 | 1999 | 2010 | 2020 |
| Idle (gr/hour) | 8.36 | 7.11 | 6.21 | 5.26 | 3.89 | 3.76 |
| 3 | 3.196 | 2.699 | 2.359 | 1.998 | 1.478 | 1.427 |
| 4 | 2.996 | 2.508 | 2.195 | 1.859 | 1.374 | 1.327 |
| 5 | 2.859 | 2.384 | 2.087 | 1.767 | 1.306 | 1.261 |
| 6 | 2.755 | 2.295 | 2.009 | 1.701 | 1.257 | 1.214 |
| 7 | 2.672 | 2.225 | 1.948 | 1.65 | 1.219 | 1.177 |
| 8 | 2.603 | 2.169 | 1.899 | 1.608 | 1.189 | 1.148 |
| 9 | 2.544 | 2.123 | 1.858 | 1.574 | 1.163 | 1.123 |
| 10 | 2.492 | 2.083 | 1.823 | 1.544 | 1.142 | 1.102 |
| 11 | 2.447 | 2.049 | 1.793 | 1.518 | 1.123 | 1.084 |
| 12 | 2.407 | 2.019 | 1.766 | 1.496 | 1.106 | 1.068 |
| 13 | 2.372 | 1.993 | 1.743 | 1.476 | 1.092 | 1.054 |
| 14 | 2.34 | 1.969 | 1.722 | 1.458 | 1.079 | 1.042 |
| 15 | 2.311 | 1.948 | 1.704 | 1.442 | 1.067 | 1.031 |
| 16 | 2.286 | 1.93 | 1.687 | 1.428 | 1.057 | 1.021 |
| 17 | 2.263 | 1.913 | 1.672 | 1.416 | 1.048 | 1.012 |
| 18 | 2.242 | 1.898 | 1.658 | 1.404 | 1.039 | 1.004 |
| 19 | 2.223 | 1.884 | 1.646 | 1.394 | 1.032 | 0.997 |
| 20 | 2.211 | 1.878 | 1.64 | 1.389 | 1.029 | 0.993 |
| 21 | 2.21 | 1.879 | 1.641 | 1.39 | 1.029 | 0.994 |
| 22 | 2.209 | 1.881 | 1.642 | 1.39 | 1.03 | 0.995 |
| 23 | 2.208 | 1.882 | 1.643 | 1.391 | 1.03 | 0.995 |
| 24 | 2.208 | 1.884 | 1.644 | 1.392 | 1.031 | 0.996 |
| 25 | 2.208 | 1.886 | 1.645 | 1.392 | 1.032 | 0.997 |
| 26 | 2.209 | 1.888 | 1.647 | 1.394 | 1.033 | 0.997 |
| 27 | 2.21 | 1.89 | 1.648 | 1.395 | 1.034 | 0.998 |
| 28 | 2.212 | 1.893 | 1.65 | 1.396 | 1.035 | 0.999 |
| 29 | 2.214 | 1.895 | 1.652 | 1.398 | 1.036 | 1.001 |
| 30 | 2.218 | 1.898 | 1.655 | 1.4 | 1.038 | 1.002 |
| 31 | 2.221 | 1.901 | 1.657 | 1.402 | 1.039 | 1.004 |
| 32 | 2.225 | 1.905 | 1.66 | 1.404 | 1.041 | 1.005 |
| 33 | 2.23 | 1.908 | 1.663 | 1.407 | 1.043 | 1.007 |
| 34 | 2.236 | 1.912 | 1.667 | 1.41 | 1.045 | 1.009 |
| 35 | 2.242 | 1.917 | 1.671 | 1.413 | 1.047 | 1.012 |
| 36 | 2.249 | 1.921 | 1.675 | 1.416 | 1.05 | 1.014 |
| 37 | 2.256 | 1.926 | 1.679 | 1.42 | 1.053 | 1.017 |
| 38 | 2.264 | 1.932 | 1.684 | 1.424 | 1.055 | 1.019 |
| 39 | 2.273 | 1.938 | 1.689 | 1.429 | 1.059 | 1.022 |
| 40 | 2.283 | 1.944 | 1.695 | 1.433 | 1.062 | 1.026 |
| 41 | 2.294 | 1.951 | 1.701 | 1.438 | 1.066 | 1.029 |
| 42 | 2.306 | 1.958 | 1.707 | 1.444 | 1.07 | 1.033 |
| 43 | 2.318 | 1.966 | 1.714 | 1.45 | 1.074 | 1.037 |
| 44 | 2.332 | 1.974 | 1.721 | 1.456 | 1.078 | 1.041 |
| 45 | 2.346 | 1.983 | 1.729 | 1.463 | 1.083 | 1.046 |
| 46 | 2.362 | 1.992 | 1.738 | 1.47 | 1.088 | 1.051 |
| 47 | 2.38 | 2.002 | 1.747 | 1.477 | 1.094 | 1.056 |
| 48 | 2.398 | 2.013 | 1.757 | 1.486 | 1.1 | 1.062 |
| 49 | 2.484 | 2.076 | 1.809 | 1.527 | 1.128 | 1.09 |
| 50 | 2.57 | 2.141 | 1.863 | 1.569 | 1.158 | 1.118 |
| 51 | 2.658 | 2.206 | 1.917 | 1.612 | 1.188 | 1.147 |
| 52 | 2.748 | 2.272 | 1.972 | 1.655 | 1.218 | 1.176 |
| 53 | 2.839 | 2.339 | 2.028 | 1.699 | 1.249 | 1.206 |
| 54 | 2.931 | 2.407 | 2.084 | 1.744 | 1.28 | 1.236 |
| 55 | 3.026 | 2.476 | 2.142 | 1.79 | 1.312 | 1.267 |
| 56 | 3.122 | 2.546 | 2.201 | 1.836 | 1.345 | 1.298 |
| 57 | 3.22 | 2.617 | 2.261 | 1.884 | 1.378 | 1.33 |
| 58 | 3.32 | 2.69 | 2.322 | 1.932 | 1.412 | 1.363 |
| 59 | 3.422 | 2.764 | 2.384 | 1.982 | 1.447 | 1.397 |
| 60 | 3.527 | 2.839 | 2.448 | 2.033 | 1.483 | 1.431 |
| 61 | 3.635 | 2.917 | 2.513 | 2.085 | 1.52 | 1.467 |
| 62 | 3.745 | 2.996 | 2.58 | 2.138 | 1.557 | 1.503 |
| 63 | 3.858 | 3.076 | 2.649 | 2.193 | 1.596 | 1.54 |
| 64 | 3.974 | 3.159 | 2.719 | 2.25 | 1.636 | 1.578 |
| 65 | 4.094 | 3.244 | 2.792 | 2.308 | 1.677 | 1.618 |

* Idle emission factor is in grams/hour.

Table A.2 - Emission Factors

| Speed (mph) | January CO Emission Factors (grams/mile) 1/13/95 | | | | | |
|---|---|---|---|---|---|---|
| | 1990 | 1995 | 1996 | 1999 | 2010 | 2020 |
| Idle (gr/hour) | 560.26 | 309.43 | 251.14 | 176.33 | 120.41 | 115.78 |
| 3 | 189.321 | 105.33 | 85.668 | 60.386 | 41.379 | 39.808 |
| 4 | 144.874 | 81.954 | 66.899 | 47.522 | 32.798 | 31.574 |
| 5 | 117.58 | 67.7 | 55.51 | 39.707 | 27.568 | 26.554 |
| 6 | 99.104 | 58.082 | 47.828 | 34.433 | 24.033 | 23.158 |
| 7 | 85.779 | 51.15 | 42.29 | 30.626 | 21.478 | 20.702 |
| 8 | 75.726 | 45.915 | 38.105 | 27.747 | 19.54 | 18.84 |
| 9 | 67.883 | 41.822 | 34.83 | 25.492 | 18.019 | 17.377 |
| 10 | 61.599 | 38.535 | 32.198 | 23.676 | 16.792 | 16.197 |
| 11 | 56.456 | 35.837 | 30.035 | 22.183 | 15.78 | 15.223 |
| 12 | 52.172 | 33.582 | 28.226 | 20.932 | 14.932 | 14.407 |
| 13 | 48.548 | 31.671 | 26.691 | 19.87 | 14.21 | 13.712 |
| 14 | 45.443 | 30.03 | 25.373 | 18.956 | 13.588 | 13.114 |
| 15 | 42.753 | 28.605 | 24.227 | 18.162 | 13.047 | 12.593 |
| 16 | 40.397 | 27.357 | 23.223 | 17.464 | 12.572 | 12.135 |
| 17 | 38.316 | 26.253 | 22.335 | 16.847 | 12.151 | 11.73 |
| 18 | 36.463 | 25.271 | 21.544 | 16.297 | 11.777 | 11.369 |
| 19 | 34.8 | 24.39 | 20.836 | 15.804 | 11.44 | 11.045 |
| 20 | 33.412 | 23.443 | 20.019 | 15.155 | 10.957 | 10.578 |
| 21 | 32.225 | 22.388 | 19.067 | 14.361 | 10.348 | 9.988 |
| 22 | 31.141 | 21.428 | 18.201 | 13.639 | 9.794 | 9.451 |
| 23 | 30.144 | 20.55 | 17.409 | 12.979 | 9.289 | 8.961 |
| 24 | 29.225 | 19.744 | 16.683 | 12.373 | 8.825 | 8.511 |
| 25 | 28.375 | 19.002 | 16.015 | 11.816 | 8.398 | 8.098 |
| 26 | 27.585 | 18.317 | 15.398 | 11.301 | 8.004 | 7.716 |
| 27 | 26.85 | 17.681 | 14.826 | 10.823 | 7.64 | 7.363 |
| 28 | 26.165 | 17.091 | 14.295 | 10.38 | 7.302 | 7.035 |
| 29 | 25.525 | 16.542 | 13.801 | 9.968 | 6.987 | 6.73 |
| 30 | 24.927 | 16.029 | 13.34 | 9.583 | 6.694 | 6.446 |
| 31 | 24.367 | 15.55 | 12.909 | 9.224 | 6.42 | 6.18 |
| 32 | 23.843 | 15.101 | 12.506 | 8.887 | 6.163 | 5.931 |
| 33 | 23.353 | 14.68 | 12.127 | 8.572 | 5.923 | 5.698 |
| 34 | 22.894 | 14.285 | 11.772 | 8.275 | 5.696 | 5.479 |
| 35 | 22.464 | 13.914 | 11.438 | 7.997 | 5.484 | 5.273 |
| 36 | 22.062 | 13.564 | 11.123 | 7.734 | 5.283 | 5.078 |
| 37 | 21.685 | 13.235 | 10.827 | 7.487 | 5.094 | 4.895 |
| 38 | 21.334 | 12.925 | 10.547 | 7.254 | 4.916 | 4.722 |
| 39 | 21.005 | 12.632 | 10.283 | 7.033 | 4.747 | 4.559 |
| 40 | 20.698 | 12.355 | 10.033 | 6.825 | 4.587 | 4.404 |
| 41 | 20.412 | 12.094 | 9.797 | 6.628 | 4.435 | 4.257 |
| 42 | 20.145 | 11.847 | 9.573 | 6.441 | 4.292 | 4.118 |
| 43 | 19.895 | 11.613 | 9.362 | 6.265 | 4.155 | 3.986 |
| 44 | 19.663 | 11.391 | 9.161 | 6.097 | 4.026 | 3.861 |
| 45 | 19.446 | 11.181 | 8.97 | 5.938 | 3.903 | 3.741 |
| 46 | 19.243 | 10.982 | 8.789 | 5.786 | 3.786 | 3.628 |
| 47 | 19.052 | 10.793 | 8.617 | 5.643 | 3.674 | 3.52 |
| 48 | 18.872 | 10.612 | 8.453 | 5.506 | 3.568 | 3.417 |
| 49 | 18.877 | 10.616 | 8.456 | 5.508 | 3.569 | 3.419 |
| 50 | 18.885 | 10.62 | 8.46 | 5.511 | 3.571 | 3.421 |
| 51 | 18.894 | 10.625 | 8.464 | 5.514 | 3.574 | 3.424 |
| 52 | 18.905 | 10.631 | 8.47 | 5.519 | 3.578 | 3.427 |
| 53 | 18.918 | 10.639 | 8.477 | 5.524 | 3.582 | 3.431 |
| 54 | 18.933 | 10.648 | 8.485 | 5.531 | 3.587 | 3.436 |
| 55 | 18.95 | 10.659 | 8.494 | 5.538 | 3.592 | 3.441 |
| 56 | 22.168 | 11.994 | 9.476 | 6.096 | 3.902 | 3.736 |
| 57 | 25.388 | 13.331 | 10.46 | 6.655 | 4.213 | 4.032 |
| 58 | 28.611 | 14.669 | 11.445 | 7.215 | 4.525 | 4.329 |
| 59 | 31.837 | 16.01 | 12.432 | 7.776 | 4.838 | 4.627 |
| 60 | 35.065 | 17.352 | 13.42 | 8.338 | 5.151 | 4.925 |
| 61 | 38.297 | 18.696 | 14.41 | 8.902 | 5.466 | 5.225 |
| 62 | 41.532 | 20.042 | 15.402 | 9.468 | 5.782 | 5.526 |
| 63 | 44.771 | 21.39 | 16.396 | 10.035 | 6.1 | 5.828 |
| 64 | 48.014 | 22.741 | 17.392 | 10.604 | 6.418 | 6.132 |
| 65 | 51.262 | 24.094 | 18.39 | 11.175 | 6.738 | 6.437 |

*Idle emission factor is in grams/hour.

**TABLE A.3**
**STATUS REPORT OF THE 1982 STATE IMPLEMENTATION PLAN TCMs**

| Transportation Control Measures Carried Forward from the 1979 SIP into the 1982 SIP | 1993 Transp. Plan | Status in 1995 |
|---|---|---|
| MBTA Plant Improvements | | |
| - Green Line improvements | X | implemented and ongoing |
| - station modernization (Park, State, Washington | | completed - other stations now being modernized (Andrew, Blue Line) |
| - miscellaneous plant improvements | | implemented and ongoing |
| MBTA Vehicle Fleet Improvements | X | implemented and ongoing |
| Commuter Rail Improvement Program | X | implemented and ongoing |
| MBTA Park 'n' Ride Program | | |
| - Alewife | X | complete - further expansion planned |
| - Quincy Adams | X | complete - further expansion planned |
| - Braintree | X | complete - further expansion planned |
| Reduction and Relocation of bus stops | X | implemented and ongoing |
| Urban Systems (TOPICS-type) Program | X | implemented and ongoing |
| Off-Street Parking Freeze - City of Boston | | implemented and ongoing |
| Off-Street Parking Freeze - City of Cambridge | | implemented and ongoing |
| Off-Street Parking Freeze - Logan Airport | | implemented and ongoing |
| Public Information/Promotion | | |
| - bus stop sign replacement | | implemented and ongoing |
| - information kiosks | | implemented and ongoing |

| | | |
|---|---|---|
| Commuter Boat Service Demonstration (Hingham to Boston) | X | regular contract service ongoing |
| Downtown Crossing Pedestrian Zone | | implemented and ongoing |
| Boston resident Parking Sticker Program | | implemented and ongoing |
| Cambridge Resident Parking Sticker Program | | implemented and ongoing |
| MDC On-Street Parking Ban | | implemented and ongoing |
| MBTA Pass Program | | implemented and ongoing |
| Masspool, Inc. (CARAVAN) | x | ongoing |
| Extension of I-93 HOV Lane to Charlestown | x | complete |
| MBTA Suburban Bus Program | X | implemented and ongoing |
| State/Local Financing Net Cost of T-Service - review of fare changes shall involve the public and consider environmental impacts | | ongoing |
| Bicycle Racks at transit stations | | ongoing |
| MDPW (MHD) Bikeway Program | | ongoing |
| Variable Work Hours Program | | ongoing |
| MBTA Idling Reduction Program | | implemented and ongoing |
| Right-Turn on Red | | implemented and ongoing |
| Charlestown Bus Garage | | completed 1979 |
| Bus Immersion Heater Program | | discontinued |
| Improved Service Delivery<br>- priority signals<br><br>- automated fare collection<br><br>- scheduling and routing modifications<br><br>- passenger shelters | <br>X<br>X<br>X<br>X | <br>implemented and ongoing<br>implemented and ongoing<br>implemented and ongoing<br>implemented and ongoing |
| Improved Service Evaluation | | ongoing |

| Transportation Control Measures Adopted Between 1979 and 1982 | 1993 Transp. Plan | Status in 1995 |
|---|---|---|
| Improved Public Transit<br>-Newton Rider Bus Service<br><br>- Insurance Discounts for Private Bus Riders | | not continued - funding not feasible<br>discounts for MBTA pass holders |
| Area-Wide Ridesharing Programs | X | ongoing |
| On-Street Parking Controls<br>- Resident Parking Sticker Programs<br>- Boston Tow and Hold Program<br>- Cambridge Zoning Ordinance Change | | ongoing |
| Pedestrian Malls - Auto Restriction Zones | | implemented and ongoing |
| Employer-Based Ridesharing Programs<br>- Airport Ridesharing Program | | ongoing |
| Road Pricing to Discourage Single-Occupant Vehicles<br>- Mass Pike, Callahan/Sumner Carpool Incentive Program | | ongoing |
| Interstate 93 Southbound HOV Lane | X | implemented, ongoing and planned to be extended |
| Traffic Flow Improvements - Urban Systems Projects | X | ongoing |
| Fringe Parking/Park and Ride Lots | X | ongoing |

**TABLE A.3 (Cont.)**
**STATUS REPORT OF THE TCMs IN THE**
**STATE IMPLEMENTATION PLAN AMENDMENTS**

| Construction Project | 1993 Transp. Plan | Status in 1995 |
|---|---|---|
| South Station Bus Terminal | X | Phase I completed, Phase II under way with completion in 1995 |
| South Station Track #12 | X | scheduled for completion in 1995 |
| Ipswich Commuter Rail extension to Newburyport | X | active project |
| Old Colony Commuter Rail Extension | X | under construction |
| Framingham Commuter Rail Extension to Worcester | X | interim service started in September, 1994 |
| 20,000 new park and ride and commuter rail station parking spaces | X | ongoing, 10,000 completed by 1996, remaining by 1999 |
| Blue Line Platform lengthening and modernization | | under construction, scheduled completion June, 1995 |
| Green Line Arborway Restoration | X | scheduled completion 1997 |
| South Boston Piers Electric Bus Service | X | scheduled completion 2000 |
| Green Line Extension to Medford Hillside (Tufts) | X | scheduled completion 2010 |
| Blue Line Connection from Bowdoin Station to Red Line at Charles Station | X | scheduled completion 2010 |
| I-93 Southbound HOV Lane to Mystic Avenue | X | completed |
| I-93 HOV Lane from Mystic Avenue to Route 128 | X | scheduled construction 2004 |
| I-93 (SE Expressway) HOV Lane from I-90 and Route 3 | X | construction to begin in 1995 |

| Study Project | 1993 Transp. Plan | Status in 1995 |
|---|---|---|
| Development of issues to be addressed in the Program for Mass Transportation | X | PMT adopted 1994 |
| Toll Pricing feasibility to Logan Airport | | in progress |
| Feasibility of toll booth on Route 1A | | completed June, 1994 |
| Feasibility of water shuttle between Boston and North Shore | | completed 1991 |
| Transit improvements study - PMT | X | PMT adopted 1994 |
| Feasibility of rail connection between South Station and Logan Airport | | final report issued July, 1994 |
| Expansion of size and number of Logan Express service parking and transit facilities | X | scheduled completion 1994 |
| Expanding high occupancy vehicle lanes and services within Logan Airport | X | completed June, 1994 |
| Connecting circumferential transit facilities and radial transit services | X | interim cross-town service started September, 1994 |
| Upgrade rail service to NY; Worcester & Springfield, MA.; Hartford, CT.; and Portland, ME. | X | in progress |
| Examine indexing of transit fares | X | addressed in the Fiscal Year 1996 Annual Fare Report -completed March 1995 |
| Feasibility of HOV Lanes on I-90 between I-93 and I-95 | X | completed 1994 |

## TABLE A.4
## CATEGORICALLY EXEMPT PROJECTS

Certain transportation projects eligible for federal funding have no impact on regional emissions. These are 'neutral' projects that, because of their nature, will not affect the outcome of regional emissions analyses and add no substance to those analyses. As a result, DOT and EPA have agreed that such projects may be excluded from the regional emissions analyses required in order to determine conformity of TIPs and Plans. Projects eligible for this treatment are as follows:

**Safety**

- Railroad/highway crossing
- Pavement marking demonstration
- Hazard elimination program
- Safer off-system roads (non-federal-aid system)
- Emergency relief (23 U.S.C. 125)
- Also specific projects for:
  - intersection channelization projects
  - shoulder improvements
  - truck size and weight inspection stations
  - safety improvement program
  - intersection signalization projects
  - railroad/highway crossing warning devices
  - changes in vertical and horizontal alignment
  - increasing sight distance
  - guardrails, median barriers, crash cushions
  - pavement resurfacing and/or rehabilitation
  - widening narrow pavements or reconstructing bridges (less than one travel lane)
  - noise attenuation
  - fencing
  - skid treatments
  - safety roadside rest areas
  - other traffic control devices
  - truck climbing lanes
  - lighting improvements
  - adding medians

## TABLE A.4
## CATEGORICALLY EXEMPT PROJECTS
## (continued)

Mass Transit

Purchase of office, shop, and operating equipment for existing facilities
Purchase of operating equipment for vehicles (e.g. radios, fareboxes, lifts, etc.)
Construction or renovation of power, signal, and communications systems
Operating assistance
Rehabilitation of transit vehicles
Reconstruction or renovation of transit buildings and structures (e.g. rail or bus buildings, storage and maintenance facilities, stations, terminals, and ancillary structures)
Construction of small passenger shelters and information kiosks
Rehabilitation or reconstruction of track structures, track, and trackbed in existing rights-of-way
Noise attenuation
Purchase of support vehicles (e.g. autos, vans)
Purchase of new buses and rail cars to replace existing vehicles or for minor expansion of the fleet to provide new service
Construction of new bus and rail storage and maintenance facilities which meet the conditions for categorical exclusion specified in 23 CFR 771

Air Quality

Continuation of ride-sharing and van-pooling promotion activities at current levels
Bicycle projects
Pedestrian facilities

Other

Engineering to define elements of proposed action or alternatives to assess social, economic, and environmental effects
Advance land acquisitions as prescribed in 23 CFR 771
Acquisition of scenic easements
Plantings, landscaping, etc.
Sign Removal

| FUNDING CATEGORY | YEAR | CITY/TOWN | PROJECT NAME | PROJECT ID ID | AIR QUALITY STATUS |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| Bridge Program (Off-System) | | | | | |
| | 1995 | ACTON | WETHERBEE ST., ACTON | 600081 | Exempt |
| | 1995 | CAMBRIDGE | FRESH POND LANE, CAMBRIDGE | 27258 | Exempt |
| | 1995 | IPSWICH | LABOR-IN-VAIN BRIDGE | 28650 | Exempt |
| | 1995 | IPSWICH | GREEN ST., IPSWICH | 600210 | Exempt |
| | 1995 | MEDWAY | WALKER ST., MEDWAY | 600121 | Exempt |
| | 1995 | MILLIS | MYRTLE ST., MILLIS | 49055 | Exempt |
| | 1995 | NEWTON | DEXTER RD., NEWTON | 600234 | Exempt |
| | 1995 | PEABODY | JOHNSON ST. EXT., PEABODY | 35906 | Exempt |
| | 1995 | READING | MINERAL ST., READING | 600769 | Exempt |
| | 1995 | WINCHESTER | SHORE RD., WINCHESTER | 600783 | Exempt |
| | 1997 | BOSTON | SILVER ST., BOSTON, 01 | 129320 | Exempt |
| | 1997 | CONCORD | MONUMENT ST., CONCORD | Pending | Exempt |
| | 1997 | GLOUCESTER | THATCHER RD., GLOUCESTER | 133850 | Exempt |
| | 1997 | HAMILTON | CUTLER RD., HAMILTON | 18115 | Exempt |
| | 1997 | SOMERVILLE | SYCAMORE ST., SOMERVILLE, 01 | 133109 | Exempt |
| | | | | | |
| Bridge Program (On-System) | | | | | |
| | 1995 | BOSTON | CENTRAL ARTERY/THIRD HARBOR TUNNEL | 195001 | Model |
| | 1995 | LITTLETON | GREAT RD., LITTLETON, 01 | 29225 | Exempt |
| | 1995 | NEWTON | RTE. 16, NEWTON | 180505 | Exempt |
| | 1995 | STATEWIDE | BRIDGE DECKS & PAINTING | Pending | Exempt |
| | 1995 | STATEWIDE | BRIDGE INSPECTION | Pending | Exempt |
| | 1996 | BOSTON | CENTRAL ARTERY/THIRD HARBOR TUNNEL | 195001 | Model |
| | 1997 | BOSTON | CENTRAL ARTERY/THIRD HARBOR TUNNEL | 195001 | Model |
| | | | | | |

## A.5 Air Quality Status of All Projects in the 1995-1997 TIP

| FUNDING CATEGORY | YEAR | CITY/TOWN | PROJECT NAME | PROJECT ID ID | AIR QUALITY STATUS |
|---|---|---|---|---|---|
| | | | | | |
| Congestion Mitigation/Air Quality Program | | | | | |
| | 1995 | BOSTON | CLEAN CITIES (I), MASSPORT | | Off-Model |
| | 1995 | BOSTON | SOUTHEAST EXPRESSWAY HOV LANE | Pending | Model |
| | 1995 | BOSTON REGION | CLEAN CITIES (II), MAPC AREA | Pending | Off-Model |
| | 1995 | BOSTON REGION | INCIDENT MANAGEMENT PROGRAM | Pending | Off-Model |
| | 1995 | BOSTON REGION | MOTORIST ASSISTANCE PROGRAM | Pending | Off-Model |
| | 1995 | BOSTON REGION | TRANSPORTATION MANAGEMENT ASSOC. (I) | Pending | Exempt |
| | 1995 | BOSTON REGION | TRANSPORTATION MANAGEMENT ASSOC. (II) | Pending | Exempt |
| | 1995 | METROWEST AREA | CLEAN CITIES (III), METROWEST AREA | | No Info Available |
| | 1995 | SOUTH SHORE | OLD COLONY RESTORATION | T00001 | Model |
| | 1995 | STATEWIDE | TRANSPORTATION DEMAND MANAGEMENT | Pending | No Info Available |
| | 1997 | BOSTON | CONGRESS ST. OVERPASS, BOSTON | 16700 | Exempt |
| | 1997 | BOSTON | LOGAN AIRPORT, BOSTON | Pending | No Info Available |
| | 1997 | BOSTON | SOUTHEAST EXPRESSWAY HOV LANE | Pending | Model |
| | 1997 | BOSTON REGION | CLEAN CITIES (II), MAPC AREA | Pending | Off-Model |
| | 1997 | BOSTON REGION | TRANSPORTATION MANAGEMENT ASSOC. (I) | Pending | Exempt |
| | 1997 | BOSTON REGION | TRANSPORTATION MANAGEMENT ASSOC. (II) | Pending | Exempt |
| | 1997 | FRAMINGHAM | IVHS TRAFFIC OPERATIONS CENTER | Pending | Exempt |
| | 1997 | STATEWIDE | TRANSPORTATION DEMAND MANAGEMENT | Pending | No Info Avaliable |
| | | | | | |
| Interstate Construction Program | | | | | |
| | 1995 | BOSTON | CENTRAL ARTERY/THIRD HARBOR TUNNEL | 195001 | Model |
| | 1996 | BOSTON | CENTRAL ARTERY/THIRD HARBOR TUNNEL | 195001 | Model |
| | 1997 | BOSTON | CENTRAL ARTERY/THIRD HARBOR TUNNEL | 195001 | Model |
| | | | | | |
| Interstate Maintenance | | | | | |
| | 1995 | BOLTON | I-495, BOLTON TO MILFORD | 68412 | Exempt |
| | 1995 | DEDHAM | RTE. 1 OVER RTE. I-95 (128) | 600704 | Exempt |
| | 1995 | FOXBOROUGH | RTE. I-95, MANSFIELD-SHARON | 600805 | Exempt |
| | 1995 | MEDFORD | RTE. I-93, MEDFORD | 71707 | Exempt |

## A.5 Air Quality Status of All Projects in the 1995-1997 TIP

| FUNDING CATEGORY | YEAR | CITY/TOWN | PROJECT NAME | PROJECT ID ID | AIR QUALITY STATUS |
|---|---|---|---|---|---|
| | 1995 | MILFORD | I-495, MILFORD-WRENTHAM | 400055 | Exempt |
| | 1995 | SHARON | RTE. I-95, NORWOOD-FOXBOROUGH | 600803 | Exempt |
| | 1995 | STATEWIDE | BRIDGE DECKS & PAINTING | Pending | Exempt |
| | 1995 | STATEWIDE | INFRASTRUCTURE IMPROVEMENTS | Pending | Exempt |
| | 1997 | MARLBOROUGH | RTE. I-495, MARLBOROUGH | 63615 | Model |
| | 1997 | READING | RTES. I-93/129, READING - WILMINGTON | 89201 | Exempt |
| Interstate Transfer | | | | | |
| | 1995 | SOUTH SHORE | OLD COLONY RESTORATION | T00001 | Model |
| | 1997 | SOUTH SHORE | OLD COLONY RESTORATION | T00001 | Model |
| National Highway Program | | | | | |
| | 1995 | BOSTON | BLUE HILL AVE., BOSTON, 03 | 6002 | Model |
| | 1995 | BOSTON | CENTRAL ARTERY/THIRD HARBOR TUNNEL | 195001 | Model |
| | 1995 | FRAMINGHAM | RTE. 9, WESTBOROUGH -FRAMINGHAM | 125399 | Exempt |
| | 1995 | MARSHFIELD | RTE. 139, MARSHFIELD | 114505 | Model |
| | 1995 | NATICK | RTE. 9 & SPEEN ST., NATICK | 130580 | Exempt |
| | 1995 | STATEWIDE | BRIDGE DECKS & PAINTING | Pending | Exempt |
| | 1995 | STATEWIDE | INFRASTRUCTURE IMPROVEMENTS | Pending | Exempt |
| | 1996 | BOSTON | CENTRAL ARTERY/THIRD HARBOR TUNNEL | 195001 | Model |
| | 1997 | BOSTON | CENTRAL ARTERY/THIRD HARBOR TUNNEL | 195001 | Model |
| Non-Federal Aid Program | | | | | |
| | 1995 | ACTON | RTE. 111, ACTON -BOXBOROUGH | 600683 | Exempt |
| | 1995 | ACTON | RTE. 27, ACTON, 03 | 104749 | Exempt |
| | 1995 | BEDFORD | LOOMIS ST., BEDFORD | Pending | Exempt |
| | 1995 | BEDFORD | SOUTH RD., BEDFORD | Pending | Exempt |
| | 1995 | BOSTON | HARVARD ST., BOSTON | 31102 | Exempt |
| | 1995 | BOSTON | MERIDIAN ST BRIDGE | 600637 | Exempt |
| | 1995 | BOXBOROUGH | RTE. 111, BOXBOROUGH -HARVARD | 600678 | Exempt |

## A.5 Air Quality Status of All Projects in the 1995-1997 TIP

| FUNDING CATEGORY | YEAR | CITY/TOWN | PROJECT NAME | PROJECT ID ID | AIR QUALITY STATUS |
|---|---|---|---|---|---|
| | | | | | |
| | 1995 | BRAINTREE | OLD RTE. 128, BRAINTREE-WEYMOUTH | 86901 | Exempt |
| | 1995 | BRAINTREE | RTE. 3, BRAINTREE | 600463 | Exempt |
| | 1995 | CANTON | NEPONSET ST., CANTON | 600470 | Exempt |
| | 1995 | CONCORD | RTE.2, CONCORD | 600521 | Exempt |
| | 1995 | DEDHAM | RTE. 109, DEDHAM | 79741 | Exempt |
| | 1995 | FRANKLIN | KING ST., FRANKLIN | Pending | Exempt |
| | 1995 | FRANKLIN | SUMMER ST., FRANKLIN | Pending | Exempt |
| | 1995 | FRANKLIN | UNION ST., FRANKLIN | Pending | Exempt |
| | 1995 | GLOUCESTER | RTE. 127, GLOUCESTER | Pending | Exempt |
| | 1995 | GLOUCESTER | RTE. 127A, GLOUCESTER | Pending | Exempt |
| | 1995 | HANOVER | RTE. 139, HANOVER | 91150 | Exempt |
| | 1995 | HUDSON | RTE. 62, HUDSON | 600574 | Exempt |
| | 1995 | LEXINGTON | MAPLE ST., LEXINGTON | 43325 | Exempt |
| | 1995 | LINCOLN | RTE. 2, LINCOLN | 600459 | Exempt |
| | 1995 | LITTLETON | RTE 119/2A, LITTLETON | 600540 | Exempt |
| | 1995 | LYNN | BOSTON ST., LYNN (1) | Pending | Exempt |
| | 1995 | LYNN | BOSTON ST., LYNN (II) | Pending | Exempt |
| | 1995 | LYNN | CHESTNUT ST., LYNN | Pending | Exempt |
| | 1995 | MARLBOROUGH | RTE. 20, MARLBOROUGH | 600122 | Model |
| | 1995 | MARLBOROUGH | I-290 | 601063 | Exempt |
| | 1995 | MEDFORD | COLLEGE AVE., MEDFORD | 15555 | Exempt |
| | 1995 | MEDFORD | GROVE ST. | 30100 | Exempt |
| | 1995 | MEDFORD | NORTH ST., MEDFORD, 01 | 52300 | Exempt |
| | 1995 | NATICK | RTE 135, 2 LOCATIONS | 600501 | Exempt |
| | 1995 | REVERE | RTE. 1A & OAK ISLAND ST., REVERE | 600173 | Exempt |
| | 1995 | REVERE | RTE. 1A & REVERE ST. | 600178 | Exempt |
| | 1995 | SALEM | RTE. 107, SALEM | 600068 | Exempt |
| | 1995 | SHARON | RTE. 27, SHARON | Pending | Exempt |
| | 1995 | STONEHAM | RTE. 28, STONEHAM | 131511 | Exempt |
| | 1995 | TOPSFIELD | RTE. 1 AT IPSWICH RD.,TOPSFIELD | 600595 | Exempt |

| FUNDING CATEGORY | YEAR | CITY/TOWN | PROJECT NAME | PROJECT ID ID | AIR QUALITY STATUS |
|---|---|---|---|---|---|
| | | | | | |
| | 1995 | WATERTOWN | MAIN ST., WATERTOWN | 600706 | Exempt |
| | 1995 | WAYLAND | RTE. 20, WAYLAND | Pending | Exempt |
| | 1995 | WAYLAND | RTE. 30, WAYLAND | Pending | Exempt |
| | 1995 | WELLESLEY | RTES. 9/16, WELLESLEY | 600072 | Exempt |
| | 1995 | WESTON | SCHOOL ST., WESTON | 101350 | Exempt |
| | 1995 | WEYMOUTH | PARK AVE. & PLEASANT ST., WEYMOUTH | 142121 | Exempt |
| | 1995 | WEYMOUTH | RTES. 18 & 53, WEYMOUTH | 600181 | Exempt |
| | 1995 | WILMINGTON | RTE. 62, WILMINGTON, 01 | 118604 | Exempt |
| | 1995 | WOBURN | RTE 93 BRIDGE | 600707 | Exempt |
| | 1996 | BEVERLY | CABOT ST | 600219 | Exempt |
| | 1996 | BEVERLY | RTE 1A | 77158 | Exempt |
| | 1996 | BOLTON | RTE. 117, BOLTON | 600580 | Exempt |
| | 1996 | BOSTON | BRIGHTON AVE | 8105 | Model |
| | 1996 | BOSTON | SIGNAL CONTROL REPLACEMENT, BOSTON | Pending | Exempt |
| | 1996 | BOSTON | SIGNAL CONTROL REPLACEMENT, BOSTON | Pending | Exempt |
| | 1996 | BOSTON | WASHINGTON ST., BOSTON | Pending | Exempt |
| | 1996 | BOSTON | COMMONWEALTH AVE | 600635 | Exempt |
| | 1996 | BOSTON | MASSACHUSETTS AVE | 600636 | Exempt |
| | 1996 | BROOKLINE | FIRE STATIONS 6 & 7, BROOKLINE | Pending | Exempt |
| | 1996 | BROOKLINE | HARVARD ST., BROOKLINE | Pending | Exempt |
| | 1996 | BROOKLINE | NEWTON ST., BROOKLINE | Pending | Exempt |
| | 1996 | BURLINGTON | ROUTE 62 RESURFACING | Pending | Exempt |
| | 1996 | BURLINGTON | ROUTE 3 | 600526 | Exempt |
| | 1996 | CAMBRIDGE | MASSACHUSETTS AVE - LAFAYETTE SQUARE | 600300 | Model |
| | 1996 | CARLISLE | RTE. 225, CARLISLE | 600449 | Exempt |
| | 1996 | CHELSEA | EASTERN AVE CORRIDOR | Pending | Exempt |
| | 1996 | DEDHAM | RTE 1, 2 BRIDGES | 75411 | Exempt |
| | 1996 | DOVER | DOVER RD BRIDGE | 600744 | Exempt |
| | 1996 | FOXBOROUGH | NORTH ST., FOXBOROUGH | 600283 | Exempt |
| | 1996 | FRAMINGHAM | RTE. 30 AT SPEEN ST., FRAMINGHAM | 110952 | Exempt |

| FUNDING CATEGORY | YEAR | CITY/TOWN | PROJECT NAME | PROJECT ID ID | AIR QUALITY STATUS |
|---|---|---|---|---|---|
| | | | | | |
| | 1996 | FRAMINGHAM | RTE 9 CALDOR RD | 600504 | Exempt |
| | 1996 | FRAMINGHAM | RTE 135 | 600577 | Exempt |
| | 1996 | FRANKLIN | UNION STREET | Pending | Exempt |
| | 1996 | GLOUCESTER | RTE 127A, GLOUCESTER | 600473 | Exempt |
| | 1996 | GLOUCESTER | RTE 128 BASS AVE | 41504 | Exempt |
| | 1996 | HANOVER | RTE 123 | 600404 | Exempt |
| | 1996 | HANOVER | RTE 53 PHASE 1B | 114501 | Model |
| | 1996 | HINGHAM | RTE 3A BRIDGE | 600964 | Exempt |
| | 1996 | HOLLISTON | RTE 16 - RTE 126 | 600571 | Exempt |
| | 1996 | HUDSON | MAIN ST., HUDSON | Pending | Exempt |
| | 1996 | IPSWICH | DOWNTOWN IPSWICH | Pending | Exempt |
| | 1996 | IPSWICH | RTE. 1 AT LINEBROOK RD. | 600066 | Exempt |
| | 1996 | MARLBOROUGH | RTE. 20 (EAST), MARLBOROUGH | Pending | Model |
| | 1996 | MEDFORD | BOSTON AVE., MEDFORD | Pending | Exempt |
| | 1996 | MIDDLETON | RTE 62 | 118601 | Exempt |
| | 1996 | MILFORD | DILLA ST - PURCHASE ST | 600631 | Exempt |
| | 1996 | MILFORD | HIGHLAND ST - WEST ST | 600631 | Exempt |
| | 1996 | MILFORD | WEST FOUNTAIN, CONGRESS | 600631 | Exempt |
| | 1996 | NATICK | RTES. 135 & 27, NATICK | 600573 | Exempt |
| | 1996 | NORFOLK | MAIN ST BRIDGE | 600763 | Exempt |
| | 1996 | NORWOOD | PENDERGAST CIRCLE BRIDGE NB | 600766 | Exempt |
| | 1996 | NORWOOD | PENDERGAST CIRCLE BRIDGE SB | 600767 | Exempt |
| | 1996 | ROCKPORT | RTE 127, RTE 127A | 600447 | Exempt |
| | 1996 | SALEM | SAFETY AT 4 INTERSECTIONS | 180531 | Exempt |
| | 1996 | SAUGUS | WALNUT ST | 2471 | Exempt |
| | 1996 | SHERBORN | S. MAIN ST., SHERBORN | Pending | Exempt |
| | 1996 | SOMERVILLE | CEDAR ST BRIDGE | 11600 | Exempt |
| | 1996 | SOMERVILLE | SCHOOL ST BRIDGE | 127900 | Exempt |
| | 1996 | SOMERVILLE | WALNUT ST BRIDGE | 137349 | Exempt |
| | 1996 | STOUGHTON | RTE 139 BRIDGE | 600772 | Exempt |

| FUNDING CATEGORY | YEAR | CITY/TOWN | PROJECT NAME | PROJECT ID ID | AIR QUALITY STATUS |
|---|---|---|---|---|---|
| | | | | | |
| | 1996 | SWAMPSCOTT | HUMPHREY ST., SWAMPSCOTT (I) | Pending | Exempt |
| | 1996 | WALPOLE | RTE 1A | 600671 | Exempt |
| | 1996 | WALTHAM | BUS PURCHASE, WALTHAM | Pending | Exempt |
| | 1996 | WALTHAM | RTE 117 - BEAR HILL RD | 600644 | Exempt |
| | 1996 | WATERTOWN | RTE 20 (NORTH BEACON ST) | 600745 | Exempt |
| | 1996 | WELLESLEY | ROCKLAND ST BRIDGE | 600776 | Exempt |
| | 1996 | WESTWOOD | GAY ST., WESTWOOD | Pending | Exempt |
| | 1996 | WESTWOOD | NAHANTAN ST | 600272 | Exempt |
| | 1996 | WESTWOOD | HIGH ST., WESTWOOD | Pending | Exempt |
| | 1996 | WESTWOOD | OAK ST., WESTWOOD | Pending | Exempt |
| | 1996 | WESTWOOD | POND ST., WESTWOOD | Pending | Exempt |
| | 1996 | WESTWOOD | RTE 1A, WESTWOOD | 600779 | Exempt |
| | 1996 | WEYMOUTH | COLUMBIAN ST BRIDGE | 15860 | Exempt |
| | 1996 | WINTHROP | RTE 145 | 600523 | Exempt |
| | 1997 | ACTON | RTE. 2, ACTON | 96902 | Exempt |
| | 1997 | BEVERLY | PARK & RIDE BEVERLY DEPOT | Pending | Exempt |
| | 1997 | BEVERLY | RANTOUL ST | 600220 | Exempt |
| | 1997 | BOSTON | BOLTON ST. | 6308 | Exempt |
| | 1997 | BOSTON | DORCESTER BICYCLE PATH | 5625 | Exempt |
| | 1997 | BOSTON | WASHINGTON ST | Pending | Exempt |
| | 1997 | BOSTON | WEST SECOND ST., BOSTON | 140276 | Exempt |
| | 1997 | BOSTON REGION | PARK & RIDE FACILITIES | Pending | Exempt |
| | 1997 | BOSTON REGION | PAVEMENT MANAGEMENT | Pending | Exempt |
| | 1997 | COHASSET | NORTH MAIN ST., COHASSET | Pending | Exempt |
| | 1997 | DANVERS | CENTRE ST., DANVERS | Pending | Exempt |
| | 1997 | DANVERS | ROUTE 114, DANVERS | Pending | Exempt |
| | 1997 | DEDHAM | SPRING ST., DEDHAM, 01 | 30835 | Exempt |
| | 1997 | DOVER | CENTRE ST., DOVER | Pending | Exempt |
| | 1997 | EVERETT | FERRY ST. & RTE. 99 (BROADWAY), EVERETT | Pending | Exempt |
| | 1997 | EVERETT | SHUTE ST. AND LYNN ST., EVERETT | Pending | Exempt |

| FUNDING CATEGORY | YEAR | CITY/TOWN | PROJECT NAME | PROJECT ID ID | AIR QUALITY STATUS |
|---|---|---|---|---|---|
| | | | | | |
| | 1997 | FRANKLIN | CHESTNUT ST., FRANKLIN | Pending | Exempt |
| | 1997 | FRANKLIN | LINCOLN & MAIN STS., FRANKLIN | Pending | Exempt |
| | 1997 | FRANKLIN | SUMMER ST., FRANKLIN | Pending | Exempt |
| | 1997 | GLOUCESTER | RAILROAD STATION, GLOUCESTER | Pending | Exempt |
| | 1997 | LEXINGTON | BEDFORD ST., LEXINGTON | Pending | Exempt |
| | 1997 | LEXINGTON | HARTWELL AVE., LEXINGTON | Pending | Exempt |
| | 1997 | LYNN | RTE. 107, LYNN | Pending | Exempt |
| | 1997 | MELROSE | ESSEX ST., MELROSE | Pending | Exempt |
| | 1997 | MELROSE | GREEN ST., MELROSE | Pending | Exempt |
| | 1997 | MELROSE | LEBANON ST., MELROSE | Pending | Exempt |
| | 1997 | MELROSE | WASHINGTON ST., MELROSE | Pending | Exempt |
| | 1997 | NEEDHAM | HIGHLAND AVE., NEEDHAM | 32670 | Exempt |
| | 1997 | PEABODY | LOWELL ST., PEABODY | Pending | Exempt |
| | 1997 | QUINCY | DRAINAGE IMPROVEMENTS, QUINCY | Pending | Exempt |
| | 1997 | SALEM | PARKING FACILITY, SALEM | 5327 | Exempt |
| | 1997 | SHERBORN | WASHINGTON ST., SHERBORN | Pending | Exempt |
| | 1997 | WALTHAM | WYMAN ST., WALTHAM | Pending | Exempt |
| | 1997 | WESTON | SOUTH ST., WESTON | 130375 | Exempt |
| | 1997 | WESTWOOD | CANTON ST., WESTWOOD | Pending | Exempt |
| | 1997 | WESTWOOD | EAST ST., WESTWOOD | Pending | Exempt |
| | 1997 | WESTWOOD | HARTFORD ST., WESTWOOD | Pending | Exempt |
| | 1997 | WESTWOOD | WINTER ST., WESTWOOD | Pending | Exempt |
| | 1997 | WOBURN | RTE. I-93 INTERCHANGE, WOBURN | Pending | Exempt |
| | 1997 | WRENTHAM | CREEK ST., WRENTHAM | Pending | Exempt |
| | 1997 | WRENTHAM | PARK ST., WRENTHAM | Pending | Exempt |
| | 1997 | WRENTHAM | TAUNTON ST., WRENTHAM | Pending | Exempt |
| | 1997 | WRENTHAM | THURSTON ST., WRENTHAM | Pending | Exempt |
| | 1997 | WRENTHAM | WEST ST., WRENTHAM | Pending | Exempt |
| | | | | | |

## A.5 Air Quality Status of All Projects in the 1995-1997 TIP

| FUNDING CATEGORY | YEAR | CITY/TOWN | PROJECT NAME | PROJECT ID ID | AIR QUALITY STATUS |
|---|---|---|---|---|---|
| | | | | | |
| Section 3 Program (Fixed Guideway) | | | | | |
| | 1995 | SOUTH SHORE | OLD COLONY RESTORATION | T00001 | Model |
| | 1996 | SOUTH SHORE | OLD COLONY RESTORATION | T00001 | Model |
| | 1997 | SOUTH SHORE | OLD COLONY RESTORATION | T00001 | Model |
| | | | | | |
| Section 3 Program (Livable Community Initiative) | | | | | |
| | 1996 | CAPE ANN | GLOUCESTER INTERMODAL RAIL STATION | Pending | Exempt |
| | | | | | |
| Section 3 Program (New Start) | | | | | |
| | 1995 | BOSTON | SOUTH BOSTON PIERS TRANSITWAY | T00002 | Model |
| | 1996 | BOSTON | SOUTH BOSTON PIERS TRANSITWAY | T00002 | Model |
| | 1997 | BOSTON | SOUTH BOSTON PIERS TRANSITWAY | T00002 | Model |
| | | | | | |
| Section 9 (Capital Assistance to Transit) | | | | | |
| | 1995 | BOSTON | BOSTON ENGINE TERMINAL | T00003 | Exempt |
| | 1995 | BOSTON REGION | MBTA BUS PROCUREMENT | T00004 | Off-Model |
| | 1995 | CAPE ANN | SUPPORT EQUIPMENT AND SERVICES | C00002 | Exempt |
| | 1996 | BOSTON | BOSTON ENGINE TERMINAL | T00003 | Exempt |
| | 1996 | BOSTON | YARD, TRACK AND SIGNAL MODIFICATIONS | T00007 | Exempt |
| | 1996 | CANTON | CANTON VIADUCT | T00006 | Exempt |
| | 1996 | CAPE ANN | SUPPORT EQUIPMENT AND SERVICES | C00002 | Exempt |
| | 1997 | BOSTON | AQUARIUM SUBSTATION VENT SHAFT | T00011 | Exempt |
| | 1997 | BOSTON | BOSTON ENGINE TERMINAL | T00003 | Exempt |
| | 1997 | BOSTON | RED LINE VENT SHAFT PROGRAM | T00010 | Exempt |
| | 1997 | CAPE ANN | SUPPORT EQUIPMENT AND SERVICES | C00002 | Exempt |
| | | | | | |

## A.5 Air Quality Status of All Projects in the 1995-1997 TIP

| FUNDING CATEGORY | YEAR | CITY/TOWN | PROJECT NAME | PROJECT ID ID | AIR QUALITY STATUS |
|---|---|---|---|---|---|
| | | | | | |
| Section 9 (Operating Assistance to Transit) | | | | | |
| | 1995 | BOSTON REGION | MBTA OPERATING ASSISTANCE | T00005 | Exempt |
| | 1995 | CAPE ANN | SECTION 9, CATA OPERATING ASSISTANCE | C00001 | Exempt |
| | 1996 | BOSTON REGION | MBTA OPERATING ASSISTANCE | T00005 | Exempt |
| | 1996 | CAPE ANN | SECTION 9, CATA OPERATING ASSISTANCE | C00001 | Exempt |
| | 1997 | BOSTON REGION | MBTA OPERATING ASSISTANCE | T00005 | Exempt |
| | 1997 | CAPE ANN | SECTION 9, CATA OPERATING ASSISTANCE | C00001 | Exempt |
| | | | | | |
| Section 16 (Mobility Assistance) | | | | | |
| | 1995 | BOSTON AREA | ACCESSIBLE TRANSPORTATION ASSISTANCE | E00001 | Exempt |
| | | | | | |
| Section 18 (Transit Assistance to CATA) | | | | | |
| | 1995 | CAPE ANN | TRANSIT ASSISTANCE | C00003 | Exempt |
| | | | | | |
| Surface Transportation Program (Boston MPO Earmark) | | | | | |
| | 1995 | BEVERLY | BEVERLY-SALEM BRIDGE & BYPASS I | 5399 | Model |
| | 1995 | BEVERLY | BEVERLY-SALEM BRIDGE & BYPASS II | 5398 | Model |
| | 1995 | BOSTON | CONGRESS ST. BRIDGE | 16555 | Exempt |
| | 1995 | SHERBORN | RTES. 16/27, SHERBORN | 600541 | Exempt |
| | 1995 | STOUGHTON | TURNPIKE & PLEASANT STS. | 91555 | Exempt |
| | 1995 | WOBURN | RTE. 3, WOBURN | 600176 | Exempt |
| | 1997 | ACTON | ROUTE 2A, ACTON | Pending | Exempt |
| | 1997 | ACTON | ROUTE 62, ACTON | Pending | Exempt |
| | 1997 | ARLINGTON | RTE . 2 ARLINGTON | 600462 | Exempt |
| | 1997 | ASHLAND | HIGH ST., ASHLAND | 160060 | Exempt |
| | 1997 | BEDFORD | CROSBY DR., BEDFORD PHASE 1 | 29490 | Exempt |
| | 1997 | BEDFORD | MIDDLESEX TPKE (PHASE 2), BEDFORD | 29491 | Model |
| | 1997 | BEDFORD | MIDDLESEX TURNPIKE, BEDFORD | Pending | Model |
| | 1997 | BELLINGHAM | S. MAIN ST., BELLINGHAM | Pending | Exempt |
| | 1997 | BELMONT | PLEASANT ST., BELMONT | Pending | Exempt |

| FUNDING CATEGORY | YEAR | CITY/TOWN | PROJECT NAME | PROJECT ID ID | AIR QUALITY STATUS |
|---|---|---|---|---|---|
| | | | | | |
| | 1997 | BOSTON | ADAMS ST., BOSTON, 01 | 600 | Exempt |
| | 1997 | BOSTON | ALBANY ST. & BROADWAY | 990 | Exempt |
| | 1997 | BOSTON | DORCHESTER AVE., BOSTON | 20805 | Exempt |
| | 1997 | BOSTON | ESSEX ST., BOSTON | 111501 | Exempt |
| | 1997 | BOSTON | MASS. AVE. CONNECTOR | 43805 | Exempt |
| | 1997 | BOSTON | NORTHERN AVE. CONNECTOR RDS., BOSTON | 153001 | Exempt |
| | 1997 | BOSTON | SOUTH STREET, BOSTON | 129325 | Exempt |
| | 1997 | BOSTON | SULLIVAN SQUARE OVERPASS | 11810 | Exempt |
| | 1997 | BURLINGTON | CAMBRIDGE STREET, BURLINGTON | Pending | Exempt |
| | 1997 | CAMBRIDGE | CAMBRIDGEPORT BYPASS RD, CAMBRIDGE | Pending | Exempt |
| | 1997 | CAMBRIDGE | CONCORD AVE & SMITH PLACE, CAMBRIDGE | 60480 | Exempt |
| | 1997 | CAMBRIDGE | MASS AVE., CAMBRIDGE | Pending | Exempt |
| | 1997 | CAMBRIDGE | WALDEN ST., CAMBRIDGE | 160065 | Exempt |
| | 1997 | CHELSEA | BEACON STREET, CHELSEA | Pending | Exempt |
| | 1997 | CHELSEA | BEECH & MAPLE STREETS, CHELSEA | Pending | Exempt |
| | 1997 | CHELSEA | BROADWAY - LOWER, CHELSEA | Pending | Exempt |
| | 1997 | CHELSEA | BROADWAY, CHELSEA | Pending | Exempt |
| | 1997 | CHELSEA | EVERETT AVE. (I), CHELSEA | Pending | Exempt |
| | 1997 | CHELSEA | SPRUCE ST. (I), CHELSEA | Pending | Exempt |
| | 1997 | CHELSEA | SPRUCE ST. (II), CHELSEA | Pending | Exempt |
| | 1997 | CHELSEA | WILLIAMS STREET (I), CHELSEA | Pending | Exempt |
| | 1997 | CHELSEA | WILLIAMS STREET (II), CHELSEA | Pending | Exempt |
| | 1997 | CONCORD | RTE. 2 AT ELM ST., CONCORD | 96890 | Exempt |
| | 1997 | DANVERS | ANDOVER STREET, DANVERS | Pending | Exempt |
| | 1997 | DANVERS | PINE STREET, DANVERS | 600222 | Exempt |
| | 1997 | FRAMINGHAM | RTES. 9&126, FRAMINGHAM | 124202 | Exempt |
| | 1997 | HINGHAM | RTE 228, HINGHAM | 600412 | Exempt |
| | 1997 | HUDSON | CHAPIN RD., HUDSON | 160040 | Exempt |
| | 1997 | LINCOLN | CONCORD RD., LINCOLN | 86461 | Exempt |
| | 1997 | MALDEN | PEDESTRIAN BRIDGE, MALDEN | Pending | Exempt |

| FUNDING CATEGORY | YEAR | CITY/TOWN | PROJECT NAME | PROJECT ID ID | AIR QUALITY STATUS |
|---|---|---|---|---|---|
| | | | | | |
| | 1997 | MIDDLETON | RTE. 114, MIDDLETON | 600227 | Exempt |
| | 1997 | MILTON | RTE. 28, MILTON, 02 | 106901 | Exempt |
| | 1997 | N. READING | RTE. 62, N. READING | 600507 | Exempt |
| | 1997 | NORWELL | RTE. 123, NORWELL | 600385 | Exempt |
| | 1997 | PEABODY | DOWNTOWN PEABODY | Pending | Exempt |
| | 1997 | REVERE | 3 BRIDGES, REVERE & SAUGUS | 118160 | Exempt |
| | 1997 | SAUGUS | RTE . 1 & WALNUT& WATER STS. | 180529 | Exempt |
| | 1997 | SCITUATE | ED. FOSTER RD., SCITUATE, 01 | 23399 | Exempt |
| | 1997 | SOMERVILLE | LOWELL ST., SOMERVILLE, 01 | 40550 | Exempt |
| | 1997 | SOMERVILLE | WEBSTER AVE., SOMERVILLE | 137350 | Exempt |
| | 1997 | WALTHAM | BEAVER STREET, WALTHAM | Pending | Exempt |
| | 1997 | WALTHAM | MAIN STREET (I), WALTHAM | Pending | Exempt |
| | 1997 | WALTHAM | MAIN STREET (II), WALTHAM | Pending | Exempt |
| | 1997 | WALTHAM | MOODY STREET, WALTHAM | Pending | Exempt |
| | 1997 | WALTHAM | TRAPELO ROAD, WALTHAM | Pending | Exempt |
| | 1997 | WATERTOWN | PLEASANT STREET, WATERTOWN | Pending | Exempt |
| | 1997 | WAYLAND | RTE. 20, WAYLAND | 105121 | Exempt |
| | 1997 | WELLESLEY | ROUTE 16 WASHINGTON STREET, WELLESLEY | 600712 | Exempt |
| | 1997 | WELLESLEY | WOODLAWN AVE., WELLESLEY | Pending | Exempt |
| | 1997 | WESTWOOD | ROUTE 109 HIGH STREET (I), WESTWOOD | Pending | Exempt |
| | 1997 | WEYMOUTH | COMMERCIAL ST., WEYMOUTH | Pending | Exempt |
| | 1997 | WILMINGTON | RTE. 38, WILMINGTON | 600455 | Exempt |
| | | | | | |
| Surface Transportation Program (Enhancement) | | | | | |
| | 1995 | CAMBRIDGE | MINUTEMAN BIKE PATH | Pending | Exempt |
| | 1995 | METROWEST AREA | METROWEST BIKEWAY MAP | Pending | Exempt |
| | 1997 | ACTON | CONCORD RD. SIDEWALKS, ACTON | Pending | Exempt |
| | 1997 | ACTON | SCHOOL ST & LAWSBROOK RD, ACTON | Pending | Exempt |
| | 1997 | BOSTON | BOSTON HARBOR WATERFRONT | | Exempt |
| | 1997 | BOSTON | NORTHERN AVE. BRIDGE, BOSTON | 53002 | Exempt |

| FUNDING CATEGORY | YEAR | CITY/TOWN | PROJECT NAME | PROJECT ID ID | AIR QUALITY STATUS |
|---|---|---|---|---|---|
| | | | | | |
| | 1997 | CAMBRIDGE | CAMBRIDGE COMMON, CAMBRIDGE | 60480 | Exempt |
| | 1997 | CONCORD | MINUTEMAN BIKE PATH, CONCORD | Pending | Exempt |
| | 1997 | HOLLISTON | CONCORD ST | Pending | Exempt |
| | 1997 | LEXINGTON | DEPOT SQUARE/EMORY PARK, LEXINGTON | Pending | Exempt |
| | 1997 | MALDEN | BIKEWAY TO THE SEA, MALDEN | Pending | Exempt |
| | 1997 | NATICK | W. CENTRAL ST., NATICK | Pending | Exempt |
| | | | | | |
| Surface Transportation Program (Rural) | | | | | |
| | 1997 | COHASETT | BEECHWOOD ST., COHASSET | Pending | Exempt |
| | | | | | |
| Surface Transportation Program (Safety) | | | | | |
| | 1997 | ACTON | ROUTE 27, ACTON | Pending | Exempt |
| | 1997 | BURLINGTON | MIDDLESEX TURNPIKE, BURLINGTON | Pending | Exempt |
| | 1997 | BURLINGTON | ROUTE 3A - CAMBRIDGE STREET, BURLINGTON | Pending | Exempt |
| | 1997 | CAMBRIDGE | PEDESTRIAN CROSSING, CAMBRIDGE | Pending | Exempt |
| | 1997 | DANVERS | SYLVAN STREET, DANVERS | 800223 | Exempt |
| | 1997 | FRAMINGHAM | RTE 126 - HOWARD ST | Pending | Exempt |
| | 1997 | HANOVER | ROUTE 139 HANOVER STREET, HANOVER | Pending | Exempt |
| | 1997 | HINGHAM | DERBY ST., HINGHAM | 600518 | Exempt |
| | 1997 | HOPKINTON | GROVE STREET, HOPKINTON | Pending | Exempt |
| | 1997 | HOPKINTON | MAIN STREET (I), HOPKINTON | Pending | Exempt |
| | 1997 | HOPKINTON | MAIN STREET (II), HOPKINTON | Pending | Exempt |
| | 1997 | MALDEN | HIGHLAND AVENUE, MALDEN | Pending | Exempt |
| | 1997 | MALDEN | LYNN STREET, MALDEN | Pending | Exempt |
| | 1997 | MAYNARD | CONCORD, HAYNES & BROWN STS., MAYNARD | Pending | Exempt |
| | 1997 | PEABODY | LOWELL ST., PEABODY | 600566 | Exempt |
| | 1997 | READING | SUMMER AVENUE, READING | 600533 | Exempt |
| | 1997 | REVERE | WASHINGTON AVENUE (I), REVERE | Pending | Exempt |
| | 1997 | REVERE | WASHINGTON AVENUE (II), REVERE | Pending | Exempt |
| | 1997 | SALEM | BOSTON ST & BRIDGE ST | Pending | Exempt |

| FUNDING CATEGORY | YEAR | CITY/TOWN | PROJECT NAME | PROJECT ID ID | AIR QUALITY STATUS |
|---|---|---|---|---|---|
| | | | | | |
| | 1997 | SHARON | RTE. 27, SHARON | 600497 | Exempt |
| | 1997 | WALTHAM | TOTTEN POND ROAD, WALTHAM | Pending | Exempt |
| | 1997 | WRENTHAM | ROUTE 1A SOUTH STREET, WRENTHAM | 600710 | Exempt |
| | | | | | |
| Surface Transportation Program (Statewide) | | | | | |
| | 1995 | FRAMINGHAM | RTES. 126/30, FRAMINGHAM | 86450 | Exempt |
| | 1995 | MARLBOROUGH | MAPLE ST., MARLBOROUGH | 43320 | Exempt |
| | 1995 | RANDOLPH | RTE. 28, RANDOLPH I | 107301 | Exempt |
| | 1995 | RANDOLPH | RTE. 28, RANDOLPH II | 107302 | Exempt |
| | 1995 | STATEWIDE | INFRASTRUCTURE IMPROVEMENTS | Pending | Exempt |
| | 1995 | WEYMOUTH | RTE. 53, WEYMOUTH | 114906 | Exempt |
| | 1996 | BOSTON | CENTRAL ARTERY/THIRD HARBOR TUNNEL | 195001 | Exempt |
| | 1997 | BOSTON | CENTRAL ARTERY/THIRD HARBOR TUNNEL | 195001 | Exempt |
| | 1997 | CONCORD | ASSABET AVENUE, CONCORD | Pending | Exempt |
| | 1997 | ESSEX | ROUTE 133, ESSEX | 600217 | Exempt |
| | 1997 | FRAMINGHAM | LINCOLN , FRAMINGHAM | Pending | Exempt |
| | 1997 | FRAMINGHAM | ROUTE 126 (I), FRAMINGHAM | Pending | Exempt |
| | 1997 | FRAMINGHAM | ROUTE 126 (II), FRAMINGHAM | Pending | Exempt |
| | 1997 | FRAMINGHAM | ROUTE 126 (III), FRAMINGHAM | | Exempt |
| | 1997 | FRAMINGHAM | ROUTE 126 (IV), FRAMINGHAM | Pending | Exempt |
| | 1997 | FRAMINGHAM | ROUTE 126 (V), FRAMINGHAM | Pending | Exempt |
| | 1997 | FRAMINGHAM | ROUTE 135, FRAMINGHAM | Pending | Exempt |
| | 1997 | FRANKLIN | ROUTE 140, FRANKLIN | 92000 | Model |
| | 1997 | FRANKLIN | RTE. 140, FRANKLIN, 02 | 92000 | Exempt |
| | 1997 | FRANKLIN | WASHINGTON STREET, FRANKLIN | Pending | Exempt |
| | 1997 | GLOUCESTER | ROUTE 127 - WASHINGTON ST, GLOUCESTER | | Exempt |
| | 1997 | MALDEN | MAPLEWOOD STREET, MALDEN | Pending | Exempt |
| | 1997 | MALDEN | ROUTE 60, MALDEN | Pending | Exempt |
| | 1997 | MALDEN | SALEM STREET, MALDEN | Pending | Exempt |
| | 1997 | MARLBOROUGH | BOUNDARY STREET, MARLBOROUGH | 6870 | Exempt |

| FUNDING CATEGORY | YEAR | CITY/TOWN | PROJECT NAME | PROJECT ID ID | AIR QUALITY STATUS |
|---|---|---|---|---|---|
| | | | | | |
| | 1997 | MARLBOROUGH | CEDAR HILL STREET, MARBOROUGH | Pending | Exempt |
| | 1997 | MARLBOROUGH | FARM ROAD/FRAMINGHAM RD, MARLBOROUGH | Pending | Exempt |
| | 1997 | MARLBOROUGH | ROUTE 20 EAST, MARLBOROUGH | 6006302 | Exempt |
| | 1997 | MARLBOROUGH | WILLIAMS STREET, MARLBOROUGH | Pending | Exempt |
| | 1997 | MARSHFIELD | RTE. 3A, MARSHFIELD, 01 | 1102000 | Exempt |
| | 1997 | MIDDLETON | ROUTE 62 BOSTON STREET, MIDDLETON | 600218 | Exempt |
| | 1997 | MIDDLETON | ROUTE 62 MAPLE STREET, MIDDLETON | Pending | Exempt |
| | 1997 | MILFORD | VETERANS MEMORIAL BLVD, MILFORD | Pending | Exempt |
| | 1997 | MILLIS | ROUTE 109, MILLIS | Pending | Exempt |
| | 1997 | NEWTON | CENTRE PARK & TREMONT STS., NEWTON | Pending | Exempt |
| | 1997 | READING | ROUTE 28, READING | 600225 | Exempt |
| | 1997 | READING | WALKERS BROOK DRIVE, READING | Pending | Exempt |
| | 1997 | READING | WEST ST., READING | Pending | Exempt |
| | 1997 | SALEM | JEFFERSON AVENUE, SALEM | Pending | Exempt |
| | 1997 | SALEM | LORING AVENUE, SALEM | Pending | Exempt |
| | 1997 | SALEM | SWAMPSCOTT ROAD, SALEM | Pending | Exempt |
| | 1997 | SHARON | DEPOT ST., SHARON | 19505 | Exempt |
| | 1997 | STATEWIDE | DESIGN & RIGHT OF WAY | Pending | Exempt |
| | 1997 | SUDBURY | BOSTON POST ROAD (I), SUDBURY | Pending | Exempt |
| | 1997 | SUDBURY | BOSTON POST ROAD (II), SUDBURY | Pending | Exempt |
| | 1997 | WELLESLEY | ROUTE 9, WELLESLEY | 125298 | Exempt |
| | 1997 | WELLESLEY | RTE. 16, WELLESLEY | 94762 | Exempt |
| | 1997 | WESTWOOD | ROUTE 109 HIGH STREET II, WESTWOOD | Pending | Exempt |
| | 1997 | WINCHESTER | WASHINGTON STREET, WINCHESTER | 600534 | Exempt |

TABLE A.6
RESULTS OF THE CTPS MODEL BOSTON MPO AREA ONLY 1995-1997 TIP NETWORK ANALYSIS:
(All Emissions in Tons/ Day)

| | 1990 Baseline | 1996 Baseline | 1996 Action | 1999 Baseline | 1999 Action | 2010 Baseline | 2010 Action | 2020 Baseline | 2020 Action |
|---|---|---|---|---|---|---|---|---|---|
| Population | 2,921,708 | 2,948,085 | 2,948,085 | 2,961,274 | 2,961,274 | 2,935,436 | 2,935,436 | 2,906,361 | 2,906,361 |
| Employment | 1,715,037 | 1,818,411 | 1,818,411 | 1,870,098 | 1,870,098 | 1,927,609 | 1,927,609 | 1,979,892 | 1,979,892 |
| VMT Avg Daily | 60,980,450 | 64,374,449 | 64,398,655 | 67,443,197 | 67,433,417 | 68,454,185 | 68,466,465 | 75,792,992 | 75,838,236 |
| Summer | 62,126,882 | 65,584,689 | 65,609,350 | 68,711,129 | 68,701,165 | 69,741,124 | 69,753,635 | 77,217,900 | 77,263,995 |
| Winter | 59,834,018 | 63,164,209 | 63,187,960 | 66,175,265 | 66,165,669 | 67,167,246 | 67,179,295 | 74,368,084 | 74,412,477 |
| Vehicle Hours of Travel (000) | 1,957,569 | 2,105,436 | 2,104,952 | 2,205,520 | 2,202,800 | 2,356,247 | 2,353,597 | 2,645,575 | 2,645,351 |
| Average Speed (mph) | 31.15 | 30.58 | 30.57 | 30.56 | 30.56 | 29.05 | 29.04 | 28.65 | 28.59 |
| VOC Emissions | | | | | | | | | |
| Modeled | 164.41 | 58.95 | 58.97 | 51.81 | 51.79 | 30.89 | 30.90 | 32.97 | 32.99 |
| Off-Model | 0.98 | 0.68 | 0.55 | 0.63 | 0.53 | 0.52 | 0.47 | 0.52 | 0.47 |
| CMAQ Red. | 0.00 | -0.01 | -0.23 | 0.00 | -0.03 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total VOC | 165.39 | 59.62 | 59.30 | 52.44 | 52.29 | 31.41 | 31.37 | 33.49 | 33.46 |
| NOx Emissions | | | | | | | | | |
| Modeled | 162.57 | 113.05 | 113.09 | 104.22 | 104.20 | 79.79 | 79.84 | 85.83 | 85.87 |
| Off-Model | 6.09 | 6.24 | 6.00 | 6.18 | 6.05 | 5.59 | 5.62 | 5.58 | 5.70 |
| CMAQ Red. | 0.00 | -0.003 | -0.14 | 0.00 | -0.06 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total NOx | 168.66 | 119.29 | 118.95 | 110.40 | 110.19 | 85.38 | 85.46 | 91.41 | 91.57 |

* CMAQ Reductions represents type of projects, not necessarily a funding category.

**TABLE A.7**
**SUPPLEMENTAL EMISSIONS INFORMATION**
**For the Area Outside the MAPC Region**
**1995-1997 TIP Network Analysis**
**(All Emissions in Tons/Summer Day)**

| | 1996 Baseline | 1996 Action | 1999 Baseline | 1999 Action | 2010 Baseline | 2010 Action | 2020 Baseline | 2020 Action |
|---|---|---|---|---|---|---|---|---|
| VOC | | | | | | | | |
| Comm Rail | 0.037 | 0.038 | 0.037 | 0.039 | 0.037 | 0.038 | 0.035 | 0.036 |
| Park & Ride | 0.090 | 0.076 | 0.077 | 0.066 | 0.047 | 0.042 | 0.047 | 0.041 |
| Comm Boat | 0.144 | 0.144 | 0.144 | 0.144 | 0.144 | 0.144 | 0.144 | 0.144 |
| Total VOC | 0.271 | 0.258 | 0.258 | 0.249 | 0.228 | 0.224 | 0.226 | 0.221 |
| NOx | | | | | | | | |
| Comm Rail | 0.843 | 0.876 | 0.843 | 0.884 | 0.843 | 0.884 | 0.800 | 0.840 |
| Park & Ride | 0.124 | 0.107 | 0.114 | 0.095 | 0.091 | 0.078 | 0.091 | 0.077 |
| Comm Boat | 0.270 | 0.270 | 0.270 | 0.270 | 0.270 | 0.270 | 0.270 | 0.270 |
| Total NOx | 1.237 | 1.253 | 1.227 | 1.249 | 1.204 | 1.232 | 1.161 | 1.187 |

Table A.7 provides supplemental emissions information on activities that occur across MPO boundaries in Eastern Massachusetts. CTPS has the capability of calculating these emissions and has provided this information in the Boston MPO Plan. These emissions are not included in the Plan or TIP analyses for any other MPOs in Eastern Massachusetts. Emissions have been provided for commuter rail and park and ride activities. Table A.6 provides the emissions for commuter rail, the MBTA buses, and park and ride lots within the Boston MPO area. In addition, Table A.7 provides emissions from commuter boat. The commuter boat emissions were calculated off-model by DEP in the 1990 base year emissions inventory and have been carried forward through 2020. The emissions from Table A.7 were combined with the emissions from the ten MPOs in Eastern Massachusetts.

# FY 1995-1997 Transportation Improvement Program and Air Quality Conformity Analysis
# Summary of Public Comments and MPO Responses
# June 1995

## Comments on the Major Amendment to the TIP

| Source | Page # | Subject | Comment | Response |
|---|---|---|---|---|
| Brookline* | N/A | Effect of Amendment on Local Projects | Opposed to the Proposed Amendment, and supportive of dedicated funding for the Central Artery. | The development of the 1996-1998 TIP will assume passage of the MHS legislation, and will re-program in FY 1996 projects that are delayed by the Major Amendment. |
| Burlington* | N/A | Effect of Amendment on Local Projects | Opposed to the Proposed Amendment, and supportive of dedicated funding for the Central Artery. | The development of the 1996-1998 TIP will assume passage of the MHS legislation, and will re-program in FY 1996 projects that are delayed by the Major Amendment. |
| Dover | N/A | Effect of Amendment on Local Projects | Opposed to the Proposed Amendment, and supportive of dedicated funding for the Central Artery. | The development of the 1996-1998 TIP will assume passage of the MHS legislation, and will re-program in FY 1996 projects that are delayed by the Major Amendment. |
| Framingham | N/A | Effect of Amendment on Local Projects | Opposed to the Proposed Amendment, and supportive of dedicated funding for the Central Artery. | The development of the 1996-1998 TIP will assume passage of the MHS legislation, and will re-program in FY 1996 projects that are delayed by the Major Amendment. |

* These comments were addressed to parties other than the MPO or an MPO agency, with copies supplied to MAPC.

## Comments on the Air Quality Conformity Analysis

| Source | Page # | Subject | Comment | Response |
|---|---|---|---|---|
| EPA | 10-7 | Southeast Expressway HOV | Concern that funding for the SE Expressway HOV Lane was being delayed in 1996. Wanted to ensure that this project will proceed as required by the SIP. | Reference was made on page 10-7 that the funding for the SE Expressway HOV will be through non-federal funds. |
| DEP | 10-8 | References to TCMs | Requested that the reference to the Revised Rideshare Regulation as part of the Contingency Plan be taken out. The Contingency Plan is going out for public hearing without the rideshare regulation as part of it. | The change was reflected on page 10-8 |
| CTPS | 10-19 | Carbon Monoxide Emissions | Modeling for carbon monoxide emissions was completed and included in the analysis. | Carbon monoxide emissions were included in Tables 10-3 and 10-4 of the conformity determination. All references to the tables were also added in. They appear on pages 10-16, 10-17, 10-20, and 10-21. |
| FHWA | 10-13, 10-14 | Project descriptions for modeling scenarios | Language change to be consistent with the Refinement to the Financial Element of the Transportation Plan | Changes made to be consistent. |
| FHWA | 10-19 | CO Emissions for years 2000 and 2005 | No emissions were provided to show conformity with the 2000 and 2005 emission budgets. | CO emissions data was provided for 2000 and 2005. |
| BTP&D | 10-2 | Reason for TIP Conformity | Language should be included to explain why a separate conformity determination is being prepared for the TIP. | Changes made to include language. |
| FHWA | 10-13 | Inclusion of certain projects | Why were Rte 20 widening in Marlborough, Rte 53 widening in Hanover, and Rte 140 widening in Franklin projects not included in the Transportation Plan? | These projects are not regionally significant projects, therefore were not included in the Plan, however they are non-exempt projects and must be included in the TIP analysis. |